ALAMO INDUSTRIAL

MAVERICK

BOOM ARM MOWER

Assembly Instruction Manual

JOHN DEERE

JD-6415, JD-6420, JD-6615, JD-6715, JD-7220
JD-7320, JD-7420, JD-7520, Cab 2 WD / 4 WD

Published 02-05

Part No. 02982434

ASSEMBLY MANUAL

Tractors equipped with additional options, special equipment, tractor manufacturer modifications, new tractor models, or Customer alterations may prevent this Mount Kit from being properly mounted to the tractor. Alamo Group is not responsible for modifications to the MountKit to accommodate these differences.

ALAMO INDUSTRIAL
1502 E. Walnut
Seguin, Texas 78155
210-379-1480

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MEMBER OF THE ALAMO GROUP
ALWAYS ON THE CUTTING EDGE

TO THE OWNER/OPERATOR/DEALER

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

BEFORE YOU START!! Read the safety messages on the implement and shown in your manual. Observe the rules of safety and common sense!

DANGER
FAILING TO FOLLOW SAFETY MESSAGES AND OPERATING INSTRUCTIONS CAN CAUSE SERIOUS BODILY INJURY OR EVEN DEATH TO OPERATOR AND OTHERS IN THE AREA.
1.
READ MANUAL
2. NO RIDERS. NO CHILDREN OPERATORS.
3. USE SAFETY SHOES, HARD HAT, SAFETY GLASSES, SEAT BELTS, & ROPS
4. BLOCK UP SECURELY BEFORE WORKING UNDER.
1. Study and understand operator's manual, safety signs, and Instructional decals for tractor and implement to prevent misuse, abuse, and accidents.
● Learn how to stop engine suddenly In an emergency. Be alert for passerby and especially children.
2. Allow no children on or near Implement or tractor. Allow no riders on tractor and implement. Falling off may cause serious injury or death from being run over by tractor or cutter or contact with rotating blades.
3. Operate only with tractor having Roll-Over Protective Structure (ROPS) and with seatbelt fastened securely and snugly to prevent injury and possible death from falling off or tractor overturn. Personal Protective Equipment such as Hard Hat, Safety Glasses, Safety Shoes, and Ear Plugs are Recommended.
4. Block up or support raised machine and all lifted components se curely before putting hands or feet under or working underneath a ny lifted components to prevent crushing Injury or death from sudden dropping or inadvertent operation of controls. Make certain area is clear before lowering or folding.
5. Before transporting, put Lift Lever in detent or full-lift position. Secure the implement for transport by installing Cylinder Stops or Transport Pin on Pull-type implement center axle and Wing Transport Locks on folding implements.
● Attach Safety Chain to cutter and towing unit securely. See Operator's Manual.
6. Make certain that the SMV sign, Warning Lights, and Reflectors are clearly visible. Follow local traffic codes.
7. Never operate with Cutting Head raised if passerby, bystanders, or traffic are in the area to reduce possibility of injury or death from Objects thrown by Blades under Guard or cutter structure.
8. Before dismounting, secure implement in transport position or lower to ground.
● Put tractor in park or set the brake, disengage PTO, stop engine, and remove key, and wait until noise of rotation Has ceased to prevent entanglement in rotating parts which can cause injury or death.
● Never mount or dismount a moving vehicle. Crushing from runover may cause injury or death.
5. TRANSPORT SAFELY, LOCK UP.
6. USE SMV, LIGHTS, & REFLECTORS.
7. DO NOT OPERATE WITH CUTTER OR WING RAISED.
8. DO NOT MOUNT OR DISMOUNT WHILE MOVING.
00749117

WARRANTY INFORMATION:

Read and understand the complete Warranty Statement found in this Manual. Fill out the Warranty Registration Form in full and return it to within 30 Days. Make certain the Serial Number of the Machine is recorded on the Warranty Card and on the Warranty Form that you retain.

INTRODUCTION

ABOUT THIS MANUAL:

The intent of this publication to provide the competent technician with the information necessary to perform the CORRECT Assembly to the Alamo Industrial Product. This will, in turn provide for complete customer satisfaction

It is hoped that the information contained in this and other Manuals will provide enough detail to eliminate the need for contact of the Alamo Industrial Technical Service Dept. However, it should be understood that many instances may arrive where correspondence with the Manufacturer is necessary.

CONTACTING MANUFACTURER: (Please help us Help You! Before You Call!)

Alamo Industrial Service Staff Members are dedicated to helping you solve your problem, or your customer's service problem as quickly and efficiently as possible. Unfortunately, we receive entirely to many calls with only a minimum amount of information. In some cases, the correspondent has never gone out to look at the equipment and merely calls inquiring of the problems described to him by the operator or customer.

Most calls received by Alamo Industrial Service can be classified into approx. 6 general categories.

1. Hydraulic or Mechanical Trouble Shooting.
2. Request for Technical Information or Specifications.
3. Mounting or Fitting Problem.
4. Special Service Problem.
5. Equipment Application Problems.
6. Tractor Problem Inquiries.

HOW YOU CAN HELP:

Make sure the call is necessary! Most of the calls received may not be necessary if the Dealer Service Technician would do the following.

1. Check the Service Information at your Dealership provided by Alamo Industrial, This would include, Service Bulletins, Information Bulletins, Parts Manuals, Operators Manuals, Assembly Manual or Service Manual, many of these are available via the Alamo Industrial Internet site (www.Alamo-Industrial.Com). Attempt to diagnose or repair problem before calling.

2. If a call to Alamo Industrial is needed, Certain Information should be available and ready for the Alamo Industrial Service Staff. Such information as, Machine Model, Serial Number, Your Dealer Name, Your Account Number and Any other information that will be useful. This information is vital for the development of a prompt and correct solution to the problem. This will also help to develop a database of problems and related solutions, which will expedite a solution to future problems of a similar nature.

3. The technician may be asked to provide detailed information about the problem including the results of any required trouble shooting techniques. If the information is not available, The technician may be asked to get the information and call back. Most recommendations for repairs will be based on the procedures listed in the Service Manual / Trouble Shooting Guide and Information provided by customer.

CONTACT ALAMO INDUSTRIAL:

Alamo Industrial, 1502 E. Walnut St. Seguin TX. 78155, Technical Service Dept. PH: 830-379-1480

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INDEX - ASSEMBLY INSTRUCTION

Page

Introduction

Manual Introduction..... Index-1

Section 1 - Model Specifications

DO NOT DO LIST (IMPORTANT)..... 1-2
Maverick Boom Specifications.....1-3 to 1-6
Hose Fitting Torque Chart.....1-6
Bolt Torque Chart.....1-7

Section 2 - Tractor Preparation

General Information..... 2-2 to 2-8

Section 3 - Lexan Door Replacement

Consult Tractor Manufacturer Door Replacement Instructions..... 3-1 to 3-2

Section 4 - Pump & Driveshaft Installation

Pump / Driveshaft Schematic.....3-2
Pulley Adapter Installation..... 4-3
Install Shaft Half of Driveshaft.....4-4
Install Tank Mount Rails..... 4-5
Install Pump Mount Plate..... 4-5 to 4-6
Install Pump..... 4-6 to 4-8

Section 5 - Hydraulic Tank & Control Valve Installation

Hydraulic Tank & Valve Assembly Installation.....5-2
Tank Hose Routing..... 5-3 to 5-4
Control Valve Fitting Identification..... 5-4 to 5-5
Hydraulic Valve Hose Referenc Sheet.....5-6
Head Tilt Lock Valve..... 5-7
Valve Hose Marking Codes..... 5-7 to 5-8
Diverter Valve..... 5-7 to 5-9
Oil Cooler & Cooling Fan Assembly..... 5-9

Section 6 - Main Frame Installation

Under Mount Component Information.....6-2 to 6-4
Frame Installation..... 6-5 to 6-8
Boom Rest Installation.....6-7
Frame Counter Weight Installation..... 6-8 to 6-9
Boom Turret Assembly Installation..... 6-9 to 6-10
Front Axle Stabilizer Kit..... 6-11

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INDEX - ASSEMBLY INSTRUCTION

Page

Section 7 - LH Wheel Weights

Standard Wheel Weight..... 7-2 to 7-3
Auxiliary Wheel Weight..... 7-4

Section 8 - Joystick / Wire Harness / Valve Installation

Wire Harness tractor Preparation..... 8-2
Replace Tractor Seat Arm Rest..... 8-3
"E"-Stop Switch Installation..... 8-5
Joystick Installation..... 8-4 to 8-6
XS Module Installation..... 8-6 to 8-8
Interior Wire Harness Installation..... 8-7 to 8-10
Exterior Wire Harness Installation..... 8-11 to 8-16
Diverter Valve Harness Connections..... 8-14 to 8-16
Oil Cooler / Fan Assembly..... 8-14 to 8-16
Hydraulic Tank Mounted Sensors..... 8-15 to 8-16
Cab Decals..... 8-17

Section 9 - Boom / Head Installation

Boom Mounting..... 9-2 to 9-5
Boom Lift Cylinder Pin Installation..... 9-2 to 9-3
Boom Cylinder Schematic..... 9-6
Valve Hose Schematic..... 9-6
Hose Routing and Connecting..... 9-2 to 9-12
Hydraulic Hose Color Identification Codes..... 9-8 to 9-12
Tank Hose to Boom Connections..... 9-10 to 9-12
Tank Hose Schematic / Routing..... 9-11 to 9-12

Section 10 - Fill Oil Tank / Setting Electronic Display Controls

Fill Unit with Oil..... 10-2 to 10-3
Prime Pump..... 10-3
Setting Electric Display Control Box..... 10-4 to 10-11
Joystick Operation..... 10-12
front Pump & Tank Cover Installation..... 10-13

Section 11 - Mounting Specification / Component Identification

John Deere 6615 & 6715 Components Only listed
(read Component page for details)

Mount Kit Components..... 11-2 to 11-26
Component Parts Identification / Descriptions..... 11-2 to 11-26

Section 12 - Pre-Delivery Inspection Check List

Check List..... 12-2 to 12-3

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NOTES

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Section 1

Model Specifications Maverick Boom 24' & 30'

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READ THIS BEFORE BEGINNING ASSEMBLY, REPAIRS OR TESTING:

The Maverick has computerized electronics. The electronic components can be damaged if care is not taken when performing repairs, testing and/or during assembly.

DO NOT

1. **DO NOT** short any wires across or allow them to be shorted out.

2. **DO NOT** attempt to jump across any wires or supply them with alternate power source.

3. **DO NOT** install higher rated fuses than are recommended by manufacturer.

4. **DO NOT** do any welding on unit unless the computer modules are unplugged first, this is to prevent a power surge going into modules (THIS IS VERY IMPORTANT). This could also apply to the tractor components. Check Tractors repair guide for specific instruction about tractor model and type.

5. **DO NOT** attempt to repair or adjust a component that is not intended to be repaired, example sealed components as there are no serviceable components inside.

6. **DO NOT** let anyone attempt any testing or repairs unless they are an experienced and qualified technician. Technicians must have proper tools, gauges, meters etc. to perform proper diagnosis and/or repairs.

7. **DO NOT** perform any repairs with dirty tools or in dirty area. When working on hydraulic components keeping system clean and free of contamination is important.

8. **DO NOT** start or engage system if the oil level is not at the proper level or condition. Never start or run unit low or out of oil.

9. **DO NOT** install / add any oil unless you know it is the correct type and the container is clean. Make certain the oil is not contaminated with dirt or any liquid.

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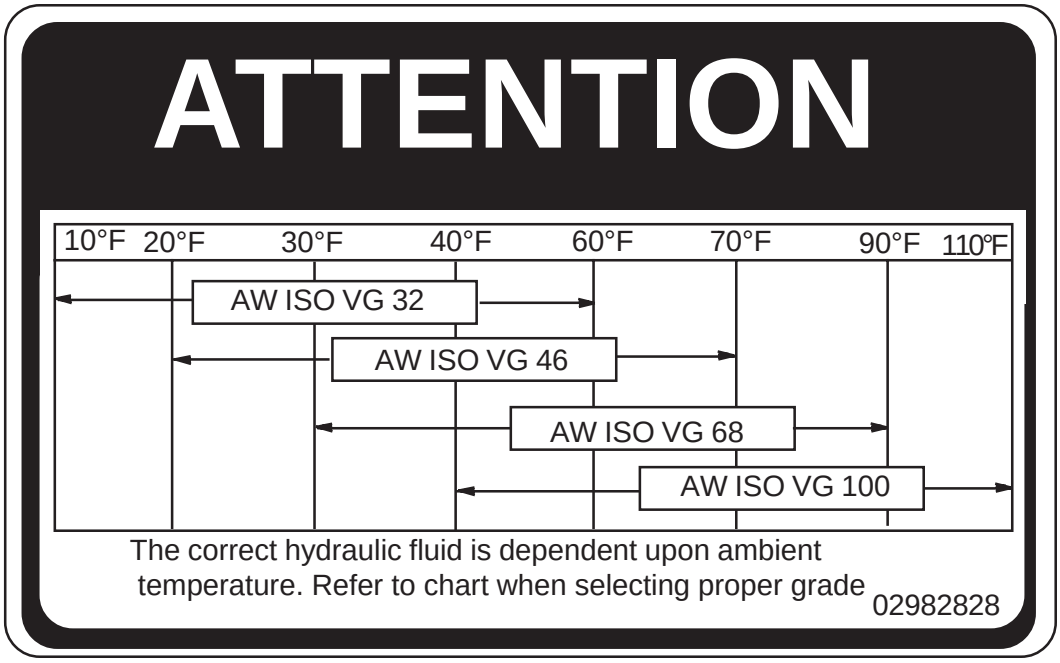
SPECIFICATIONS - MAVERICK

1. CUTTING CIRCUIT SPECIFICATIONS

Hyd. Pump Speed (Front Aux Pump)	1950 RPM
Hyd. Motor Speed	1220 RPM
Hyd. Motor Rated HP	199 HP
Hyd. Motor Rotation (as viewed f/ Top of the Deck)	CW (Clockwise)
Relief Valve Setting At Motor	4000 PSI
Relief Valve Setting At Pump	4500 PSI
Hyd. Pump Flow (Front Pump @ 1950 RPM)	25.3 GPM
Hyd. Oil Operating Temperature @ 100° F Ambient	155 - 165 ° F.
Hyd. Oil Filtration, (Discharge f/ Charge Pump)	10 Micron
Hyd. Tank Capacity	17-1/2 Gal.
Hyd. Motor Start Stop Time (Approximate)	6 Seconds
Cutting Diameter, (Rotary Head)	58 Inch
Spindle	4.5 " by 9" Heat Treated Alloy
Blade Bar Type	Stacked 3 Leaf
Blade Bar Size	1-1/4" Thick X 5" Wide (Ea. Leaf)
Blade Bar Material	T1 Steel (bottom) & HRFB Steel (top & Middle)
Blade Swing	360 Deg Swing
Blade Material	High Carbon Alloy Steel
Cutter Weight. (Approximate w/ Rotary Head)	950 lbs.
Cutter Deck Opening & Closing	Hyd. Operated Door
Recommended Hydraulic Oil	ISO AW Hyd. Oil (See decal below)
Fluid Cleanliness level	ISO 16/14/11



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SPECIFICATIONS - MAVERICK

2. BOOM SPECIFICATIONS

Boom Reach 24 Foot Boom	Out 24'
Boom Reach 30 Foot Boom	Out 30'
Frame	Manufactured Box Sections
Pins	Chrome Plated Alloy
Bushings	Greasable
Weight, 24' Boom	1250 lbs.
Weight, 30' Boom	1450 lbs
Boom Rest	Tractor Axle Mounted
Boom Mounting	ROPS or CAB Tractor Optional

3. FILTRATION

Control Valve Functions: Control functions include All Hydraulic Cylinders used to manipulate the Maverick Boom. The boom and frame cylinders are powered by a self contained hydraulic system. The pump is loctated on the front of the tractor. There is an in-line pressure filter (P/N 02981371) between the closed center load sense pump and cylinder control valve. There is a return filter (P/N 02981391) mounted to the tank that filters the fluid returning from the control valve to the tank. Filter change recommended for every 200 to 250 hours. An electronic monitoring system monitors element back pressure for indication of clogged filter prior to element change.

Mower Head Functions: Mower Head Functions are operated by Pump, which is mounted to the front of the Tractor Engine. This will have an in-line Filter installed into hydraulic circuit, This filter should be changed on a regular maintenance schedule. Filter are rated by Micron size (10 Micron), Filters should be replaced with original Alamo Industrial Replacement Filters to make certain the correct rated filter element is installed at all times. (Pressure Filter is P/N 02968922 and Return Filter Replacement Element is P/N 02968923)

4. HYDROSTATIC PUMP SPEC'S

Cutter Head Pump Circuit Spec's:

Pump Type	Piston Type
Pump Speed (Front Engine Mounted)	Run Engine to 540 PTO Speed
Relief Setting at the Pump	4500 PSI
Pump Flow (Front Engine Operating Speed)	25.3 GPM

Boom Cylinder Pump Circuit Spe'c's:

Pump Type	Piston Type
Pump Speed	1800 RPM
Pump Flow (Front Engine Operating Speed)	15.6 GPM
Low Pressure Standby	250 PSI
High Pressure Comp	3000 PSI
Horse Power at 1850 RPM (Engine Speed)	28.5 HP

5. HYDRAULIC HOSE CODES

Hydraulic Hose Band Mark Color Codes:

Hose's and/or fittings are marked with a Color Coded Plastic Band around it. Some Bands are a solid Color and some have a Colored with a Stripe. The purpose of the colored bands are to provide a quick reference for hose and port connection. A metal band is also attachted to the hose, on that band is an Alamo Industrial Part Number for reference if needing a replacement hose. **Always Check Hose Size, Color Code & Part Number**

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Boom Cylinder Circuit Hoses:

Color Tie	(Code)	Hose Size	Hyd. Function
Green	G	SAE # 6	Swing, Back (Rod End)
Green / White	G/W	SAE # 6	Swing, Forward (Base End)
Orange	OR	SAE # 6	Lift, Down (Rod End)
Orange / White	OR/W	SAE # 6	Lift, Up (Base End)
Blue	B	SAE # 6	Dipper, In (Rod End)
Blue / White	B/W	SAE # 6	Dipper, Out (Base End)
Yellow	Y	SAE # 6	Telescope, In (Rod End)
Yellow / White	Y/W	SAE # 6	Telescope, Out (Base End)
Red	R	SAE # 6	Head Tilt, Up (Rod End)
Red / White	R/W	SAE # 6	Head Tilt, Down (Base End)
Green	G	SAE # 4	Swivel, CW (Rod End)
Green / White	G/W	SAE # 4	Swivel, CCW (Base End)
Yellow	Y	SAE # 4	Door, Open (Rod End)
Yellow / White	Y/W	SAE # 4	Door, Closed (Base End)

Motor Circuit Hoses:

Color Tie	(Code)	Hose Size	Hyd. Function
Red	R	SAE # 16	Pressure Flow to Motor
Orange	OR	SAE # 16	Return Flow From Motor
Blue	B	SAE # 8	Case Flow From Motor to Boom
Blue	B	SAE # 12	Case Flow at Boom to Tank

6. HYDRAULIC CYLINDER PRESSURE RATES:

Cylinder Type..... Welded Cylinders
Cylinder Working Pressure..... 3000 PSI

Hydraulic Cylnder Repair Specs:

Cylinder Part No.	Cylinder Function	Piston Nut Torque ft. lbs.	Gland Torque ft. lbs.	Seal Kit Part No.
02981275	Swing	400-500	80-120 (Head)	02982066
02981278	Lift (30 ft.)	400-500	80-120 (Head)	02982069
02981279	Lift (24 ft.)	400-500	80-120 (Head)	02982070
02981277	Dipper	400-500	80-120 (Head)	02982068
02981280	Tilt	400-500	80-120 (Head)	02982071
02961480A	Door (Rotary)	150-250	80-120 (Head)	02975528
02970710A	Door (Flail Axe)	40-60	80-120 (Head)	02975532
02971423	Slide (Timber Cat)	400-500	50-60 (Tie Rod)	02973505
02811000A	Door (Ditcher)	150-250	80-120 (Head)	02975528
02981316	Stabilizer	40-60	80-120 (Head)	02982073
02981315	Swivel (Rotary)	300-400	80-120 (Head)	02982072
02981276	Extension	300-400	80-120 (Head)	02982067

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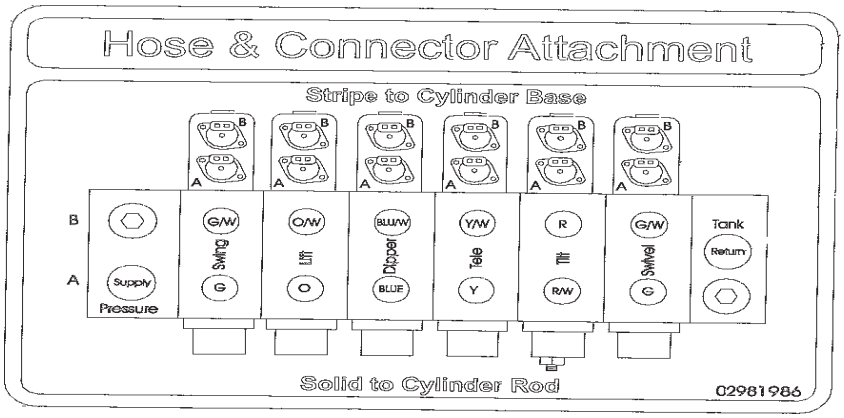
7. VALVE SPECIFICATIONS

Valve Type: Multi-Section, Load Sense, Pressure Compensated, Directional control Valve. Features electro-hydraulic spool actuators for proportional characteristics.

Valve Construction: Multi-Section, Individual Spool, with electro-hydraulic solenoids. Tie rod bolt together type.

Valve Controller: Mechanical over Electric. 3-axis, multi-function, lever-type joystick.

Valve Porting and Hose Connections: Hoses connect to valve as shown by color code. See Decal P/N 02981986 below, Electrical connections connect as shown, Reference label on connector and corresponding solenoid.



8. Valve Spool Functions & Spec's (Boom Feature):

Main Relief at Inlet 3335 psi - **Valve Spool Functions & Specs:**

Band Color	Spool No.	Cyl. Function	Travel Direction	Port	Work Port Relief	Pressure Rating
G/W	1	Swing	Forward	B	3045 psi.	2.0
G	1	Swing	Back	A	3045 psi.	2.0
OR	2	Lift	Down	B	1160 psi.	7.92
OR/W	2	Lift	Up	A	Plug	7.92
B/W	3	Dipper	Out	B	Plug	3.17
B	3	Dipper	In	A	1160 psi.	3.17
Y/W	4	Telescope	Out	B	2030 psi	3.17
Y	4	Telescope	In	A	Plug	3.17
R/W	5	Tilt	Up	A	Plug	3.17
R	5	Tilt	Down	B	2030 psi	3.17
G	6	Swivel	CW (top)	A	2755 psi	6.60
G/W	6	Swivel	CCW (top)	B	2755 psi	6.60

Valve Spool Functions & Specs: The Cylinder Cycle has adjustable settings, slow, medium and fast, Time Cylinder cycle of unit, Time indicates the time for the Cylinder to travel the full amount of its extension or retraction. The lift times up and down are taken with the dipper fully extended and begin with the Deck flat on the ground. All Cycle times are measured at the rated Tractor RPM. Test Times should vary as according to the setting being used.

Valve Leakage: Maximum internal Valve Leakage from the Cylinder. Ports to Tank at any Valve Segment, Oil Pressure at 1450 PSI and Oil Viscosity at 102 SSU = 1.25 Cubic Inch / Minute

Standby (Pilot) Pressure: Standby (Pilot) Pressure = 200 to 250 PSI.

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9. HOSE END FITTING TORQUE SPECS:

Hose End Type: 37 Degree Angle End Steel Hose End Fittings*

Dash Size	Nominal Cyl. Size (in.)	Torque in. lbs.	Torque ft .lbs.
-4	1/4"	140	12
-6	3/8"	230	19
-8	1/2"	450	38
-10	5/8"	650	54
-12	3/4"	900	75
-16	1"	1200	100
-20	1-1/4"	1600	133
-24	1-1/2"	2000	167
-32	2"	2800	233

* Straight Threads do not always seal better when higher torques are used. Too much torque causes distortion and may lead to leakage. DO NOT over torque fittings and DO NOT allow any contaminants to enter system through fittings when installing them.

10. Special Torque Specifications (Rotary Heads)

Motor to Spindle Housing..... 100 ft. lbs.
Spindle to Deck.....425 ft. lbs.
Spindle to Adjusting Nut (Bearing Preload)..... 25 in. lbs. Rolling Torque
Blade Bar Leaf Bolts (1-1/4" Bolts)..... 2000 ft. lbs.
Blade Bar to Spindle Bolts..... 400 ft. lbs.
Blade Bolts..... 400 ft. lbs.
Motor Plate..... See Set Up Instructions

11. TORQUE VALUES - BOLTS: Recommended Torque, Ft. lbs. & (Nm)

IMPORTANT! Listed below IS BOLT TORQUE and NOT APPLICATION TORQUE, Component Application Torque will vary depending on what is bolted down and the type material (Metal) that is being bolted together. Thread condition and lubrication will vary Torque settings.

ALWAYS CHECK MARKINGS ON TOP OF BOLT HEAD OR OTHER BOLT DESCRIPTIONS

Inche Sizes

Bolt Dia. inch	2 (B) Plain Head ft. lbs (*N-M)	5 (D) 3 Dashes ft. lbs (*N-M)	8 (F) 6 Dashes ft. lbs (*N-M)
1/4	Not Used	10 (*14)	14 (*19)
5/16	Not Used	20 (*27)	30 (*41)
3/8	Not Used	35 (*47)	50 (*68)
7/16	35 (*47)	55 (*75)	80 (*108)
1/2	55 (*75)	85 (*115)	120 (*163)
9/16	75 (*102)	130 (*176)	175 (*230)
5/8	105 (*142)	170 (*230)	240 (*325)
3/4	185 (*251)	300 (*407)	425 (*576)
7/8	160 (*217)	445 (*603)	685 (*929)
1	250 (*339)	670 (*908)	1030 (*1396)
1-1/8	330 (*447)	910 (*1234)	1460 (*1979)
1-1/4	480 (*651)	1250 (*1695)	2060 (*2793)

Metric Sizes

Bolt Dia. mm	4.8 ft. lbs (*N-M)	8.8 ft. lbs (*N-M)	10.9 ft. lbs (*N-M)
6	5 (*6)	7 (*9)	12 (*16)
8	11 (*15)	20 (*27)	25 (*33)
10	20 (*27)	40 (*54)	58 (*78)
12	37 (*50)	70 (*95)	105 (*142)
14	60 (*81)	100 (*135)	140 (*189)
16	92 (*124)	155 (*210)	200 (*271)
18	118 (*159)	216 (*292)	280 (*379)
20	160 (*217)	270 (*366)	355 (*481)
22	215 (*291)	330 (*447)	430 (*583)
24	285 (*386)	500 (*678)	700 (*949)
27	450 (*610)	875 (*1186)	1000 (*1355)
30	600 (*813)	1200 (*1627)	1700 (*2304)
33	800 (*1084)	1600 (*2169)	2300 (*3118)
36	900 (*1220)	2100 (*2847)	3000 (*4067)

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NOTES

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Section 2

Maverick Boom

Tractor Preparation

John Deere Tractor
JD-6615, 6715

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GENERAL INFORMATION:

The tools you will need at the assembly site are as follows:

1. Impact wrench or socket and ratchet set.
2. Rubber mallet.
3. Box-end, Allen, and adjustable wrenches.
4. Alignment pins.
5. Forklift or hydraulic floor jacks with rolling back boards.
6. Small chain hoist or block-and-tackle.
7. Multidirectional Levels.
8. Hydraulic Filter Buggy or Cart.
9. Safety shoes, safety glasses, and gloves.
   A hard hat should be worn by anyone working under any raised component.

Remember to follow each step closely and cautiously. Be aware of all support personnel at all times. Keep the assembly area as clean as possible; clean up all spills when they occur. An uncluttered assembly area and a crew that is sensitive to the hazards involved in putting this implement together will help prevent accidents. Keep all unauthorized personnel from the area. Do not allow children near the assembly site nor allow them on or near the tractor after assembly. There is no safe place for anyone except the operator on the tractor and those assisting with the assembly.

To help you assemble your new Machete Boom and mount it to your tractor, a detailed assembly instruction Manual is being provided with the mount kit to provide detailed instructions and part numbers. Please consult this document for specific information. When needed, you can get additional information or clarification from Your Dealer or Alamo Group Customer Service.

This publication provides general information not specifically for your case or tractor, but, in connection with the drawings, this publication offers you some valuable assistance - please read it thoroughly.

These mount kits are made for selected tractors with standard configurations. Only the noted options and tire sizes listed in the Mounting Specifications will work with these mount kits. Other options, front axles, or different tire sizes may prevent the mount kit from fitting your nonstandard tractor. Alamo Group cannot take responsibility for these problems or any modifications made to the unit.

Throughout these instructions, references are made to right or left directions. Right and left are determined by sitting on the tractor seat and facing the direction of travel forward always.

This is the Safety-Alert symbol. When you see this symbol on your machine or in these instructions, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.

DANGER!

A signal word - **DANGER**, **WARNING**, or **CAUTION** - is used with the Safety Alert symbol. **DANGER** identifies the most serious hazards.

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WARNING! Safety signs with signal word **WARNING** are typically used to point out more serious hazards.

CAUTION! General precautions are listed on **CAUTION** safety sign. **CAUTION** also calls attention to safety messages in these instructions.

DANGER
CRUSHING AND PINCH POINTS
MOVING MACHINERY PARTS CAN PINCH OR CRUSH
OR FALL- WHICH MAY CAUSE INJURY OR DEATH.
02962765

GENERAL INFORMATION

The tools you will need at the assembly site are as follows:

1. Welding equipment (including correct head gear, eye shields, and protective clothing.)
2. Impact wrench or socket and ratchet set.
3. Rubber mallet.
4. Box-end, Allen, and crescent wrenches.
5. Alignment pins.
6. Phillips and plain-head screwdrivers.
7. Forklift or hydraulic floor jacks with rolling back boards.
8. Over head hoist and floor jacks
9. Jack Stands and/or other support devices that are strong enough to support tractor and components
10. Multidirectional Levels.
11. Paint Scraper.
12. Hydraulic Filter Buggy or Cart.
13. Safety shoes, safety glasses, and gloves. A hard hat should be worn by anyone working under any raised component.

Remember to follow each step closely and cautiously. Be aware of all support personnel at all times. Keep the assembly area as clean as possible; clean up all spills when they occur. An uncluttered assembly area and a crew that is sensitive to the hazards involved in putting this implement together will help prevent accidents. Keep all unauthorized personnel from the area. Do not allow children near the assembly site nor allow them on or near the tractor after assembly. There is no safe place for anyone except the operator on the tractor and those assisting with the assembly.

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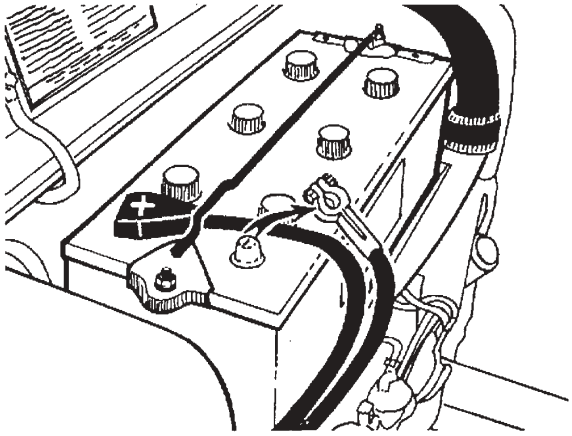
WARNING!

Disconnect the negative lead (ground) from the battery terminal to prevent any damage to the electrical system.



LEVELING TRACTOR:

TRACTOR MUST be on level ground before assembly is begun. The tractor must be level, All tires must have the proper amount of air in them as per tire and/or Tractors manufactures recommendations. **DO NOT** level tractor by over inflating tires. The tractor can be leveled by jacking it up and putting it on jack stands if needed.

Replacement Oil Filter

Included in the packing box of this unit is a replacement filter element for filter assembly in the tank. This Mower unit's hydraulic components have been carefully cleaned and packaged at the factory to prevent contamination from entering the system. However, dust and dirt particles may enter into the sealed components through transportation, handling, rain, or just sitting in a dirty or harsh environment. Therefore to assure that the hydraulic system is properly clean, please prepare the area where the unit is to be assembled. The area should be on a hard concrete floor that has been swept clean of all dust and contaminants. Unpacked the Mower unit carefully so that the seals on the hydraulic components are not broken or pulled off.

WARNING!

Before attempting to assemble the mower to the tractor, move the tractor to a clean solid surface, preferably a concrete shop surface with an over head crane. The crane should have a rated capacity to lift the heaviest component or assembly. A 5-ton crane is recommended for the assembly work. If a smaller crane is used, be sure not to exceed the rated capacity of the crane.

- Always follow all OSHA crane operating and inspection rules, regulations, inspection requirements, and recommended practices when using the crane.
- Never work under any component that is lifted by the crane.

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WARNING!

Wear personal protective equipment when assembling the mower. As a minimum that should include:

- Safety Glasses
- Safety Shoes
- Gloves
- Hard Hat
- Hearing Protection
- Welding Helmet

WARNING!

Before attempting to assemble ensure that the tractor engine is off and the tractor transmission is in the park position with the parking brake engaged.

- Remove the engine key and keep it in your pocket to prevent inadvertent starting or movement of the tractor.
- Place wheel blocks in front and behind the tractor wheels to prevent the tractor from moving.
- Never attempt to start the tractor unless properly seated in the tractor seat with the seat belt fastened around you.
- Never attempt to operate the tractor and mower controls unless seated in the tractor seat with the seat belt fastened around you.

WARNING!

Securely block up and support the tractor before attempting to loosen and move the tires. Failure to properly block up the tractor can result in the tractor to suddenly move or fall, crushing you or another worker.

- Never work under any raised component or any component that is not securely blocked up or supported.

WARNING!

Many components of this mower are very heavy and must be handled by proper material handling equipment. Do not lift components that weight over 50lbs by yourself.

- Use an overhead crane, forklift, or other coworkers to lift heavy items. Ensure lifted components are securely supported.
- Never walk or work under a lifted component.

WARNING!

Use extreme care when moving, handling or adjusting the tractor tires. The tires are extremely heavy and could fall and crush you

- Use an overhead crane or forklift to move the tires.
- Properly fasten the tires to the material handling equipment to prevent the tire from falling.

WARNING!

The hydraulic oil is under high pressure and a hydrauli leak can cause oil to be injected under the skin.

- Before starting the tractor ensure all hydraulic connections have bee tightened
- Never check for leaks with your hands. Use a piece of wood or cardboard to check for the leak making sure your hands and face are kept away from the leak area.
- Repair any leaks before operating the equipments
- Clean up all oil that has leaked according to the requirements of the oil supplier. Oil residue on the ground can result in unjury from slipping or falling.

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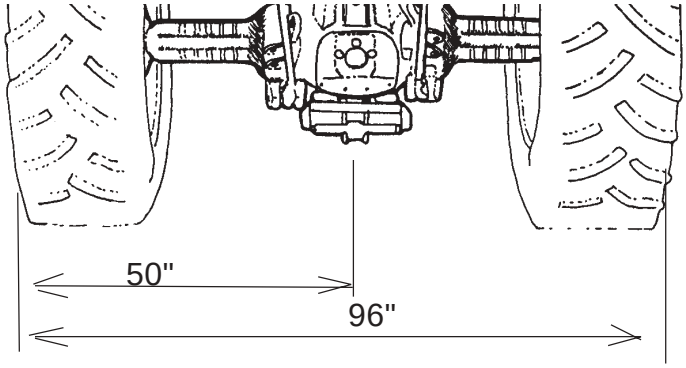
TRACTOR PREPARATION (FIGURE 1 & 2)

1. Temporally remove ROPS and fenders from tractor axle. Move left rear tire out so that it is 50 inches from the outside of left rear tire to the center of tractor. Then move the right rear tire out so that it is 96 inches between the outside of the left and right rear tires. Refer to your tractor's Operator's Manual for instructions on Rear Wheel Adjustment for your particular tire. **FIGURE 1.** Hydraflate rear left tire as much as needed for stability but stay in factory-recommend limit.

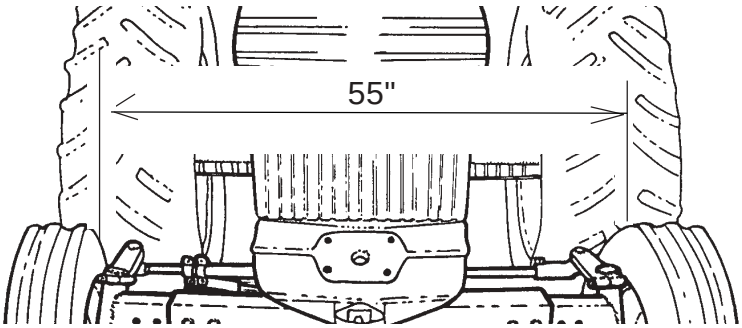
FIGURE 1



WARNING: Never operate the tractor with a loose wheel rim or disc. Always tighten nuts to the specified torque and at the recommended intervals.

2. Extend front wheels out so that it is 55" inches between the inside of the tires. This will allow no interference between tire and front mount bracket. **FIGURE 2.**

FIGURE 2



Tractor, Area Cleanliness

The Tractor, all tools and work area must be clean of dirt and debris when assembling any hydraulic components. DO NOT leave any hydraulic component open to the elements. DO not use any containers for fluids that are not clean and free of any other liquids. DO NOT use rags/cloth that has lint or fuzz on them when working on hydraulic components. Keep all hoses capped until you are ready to connect them.

Maverick Cleaning

The Maverick Components are designed to be water resistant. But the sealing can be damaged by Pressure Washers, Steam Cleaners, Solvents or any other harsh chemical that would be used to clean the units components. It is important to keep all electrical connections and components sealed and dry. When washing and cleaning this unit it should be done with a non corrosive soap and low pressure spray of water. It is recommended that all exposed electronic components be covered and protected from excess moisture.

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Lay Out Components in Display. It is helpful to lay out the component in as neat a display as possible. Lay out the Bolts according to size and length. Lay out the Nuts and washer by size. This will allow you to see how many of each part as you use them and help to identify any missing parts. (See figure 6) See Mount Kit Specification and Component Identification Section to help ID Components. **All the component that are received should be check and sorted as to what they are. Shown below is a general example of the components laid out, this is not a lay out of the components in this mount kit.**

WARNING

DO NOT WELD On This Unit During or After Installation:

DO NOT WELD any components or items on this unit after the installation of the maverick Boom has begun. The Maverick Boom uses electronic modules and components that could be damaged by welding. Before doing any welding ALL ELECTRONIC MODULES AND DISPLAY COMPONENTS MUST BE UNPLUGGED. Check the Tractors Opertion, Repair, Service or any other manual from the tractor manufacturer of the tractor to find any special electronic or special proedures about the tractor electronics. Taking a few minutes to check could save you from a major damage to the electronics.

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NOTES

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Section 3

MAVERICK

John Deere Tractor
JD-6615, 6715

Optional
RH Lexan Door
Installation

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John Deere 6615 & 6715 Lexan Door Kit No.

Important Instructions

RH Lexan Door Kit.

Remove & Dis-Assembly of Factory Stock Glass Door.

1. The Removal of Factory Glass Door. The removal of the factory glass door, you will need to consult the Tractor manufacturers repair assembly manual. Save the parts that are removed from the factory glass door as they will be needed on the Lexan Door. The installation of the lexan door will be the same as the factory glass door using most of the same hardware, again consult the tractor manufacturer assembly / repair instruction in the tractor manufacturer repair / service manual.

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Section 4

MAVERICK

Pump & Driveshaft Installation

John Deere Tractor JD-6615, 6715

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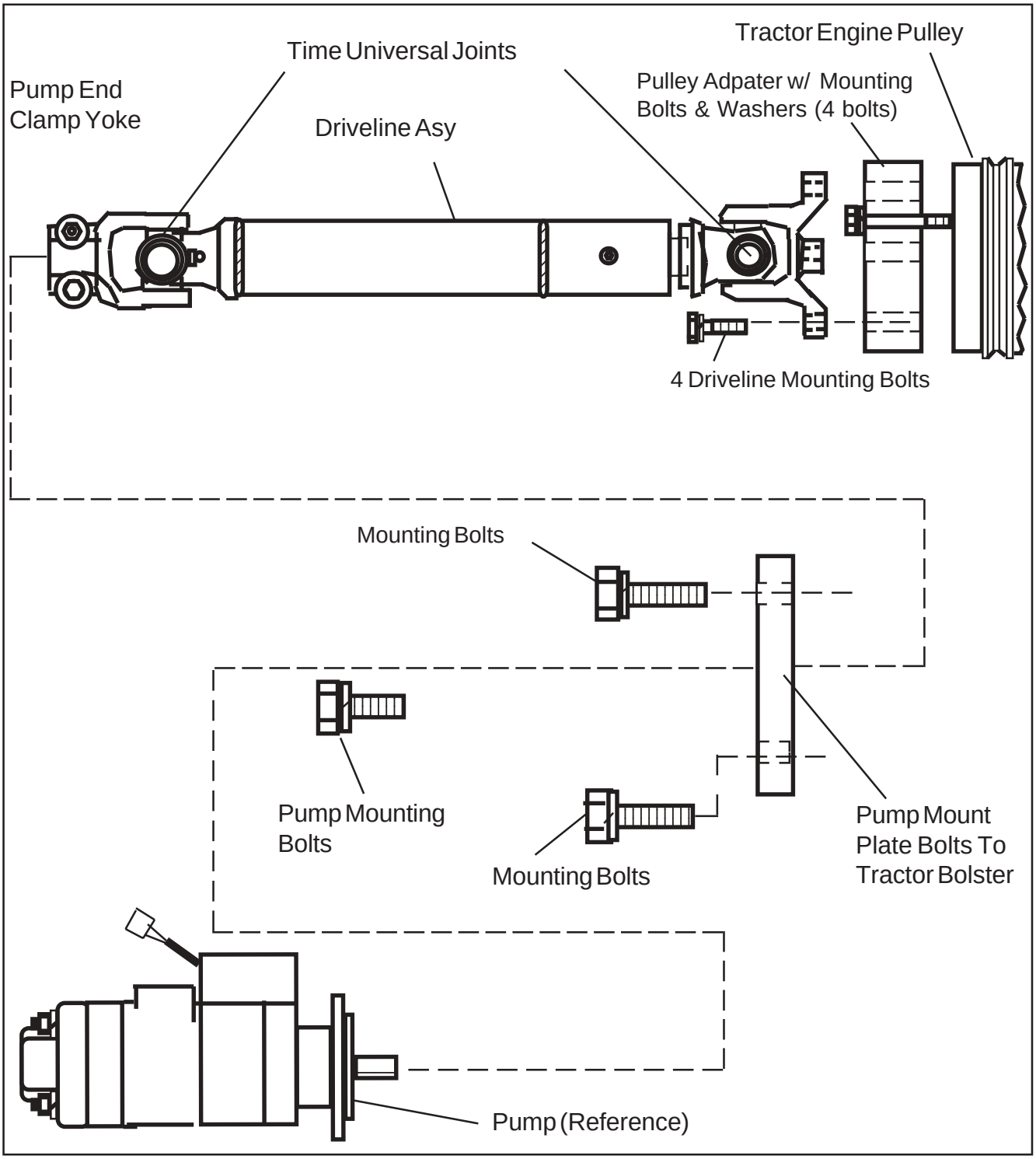
Pump / Driveshaft Schematic



Pump Drive Schematic:

This Section covers the installation of Pump Drive Components, Pump Assembly Some precautions that must be followed during the Assembly Process before unit is ever started for the first time.

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Pump / Driveshaft Assembly Instructions

Installing Pump, Pump Drive Components and Hydraulic Tank:

This Section covers the installation of Pump Drive Components, Pump Assembly and the Hydraulic Tank. Some precautions must be followed during the Assembly Process and before unit is ever started for the first time.

1. Tractor must be disabled to prevent accidental engine start and prevent damage to components.

2. All Fittings, Hose, Cylinders, Tank must be kept plugged at all times, No part of the Hydraulic System can be left open at any time during mounting process, this will keep system clean.

3. All Tools, Work Area, Components and Workers Hands must remain Clean when working on any part of the Hydraulic System.

4. All components should be rechecked for tightness at least twice, Hose routing also double checked.

Figure 1

Install Crankshaft Pulley Adapter, Driveshaft & Pump Mount Plate:

1. Remove Plate from the front of the Tractor., On front of the tractor there is a plate that must be removed, it is retained with two Allen head bolts that can be seen from the outside (See Figure 1). Remove these two bolts and remove the cover, this cover will not be used (See Figure 2) There is already a hole through the front bolster that will allow the driveshaft to be run through it.

Figure 2

2. Install Pulley Adapter. The Pulley adapter (P/N 02979790) is a round plate with 4 threaded holes and four non-threaded holes in it. Notice this pulley adapter will not have a center hole in it **(See Figure 3).** The four non-threaded holes are used to mount the Adapter to the Crankshaft Pulley using bolts (P/N 02980967) 12 mm X 60 mm long and lockwashers (P/N 00754566) 12 mm that are supplied in mount kit. The four threaded holes are used to install the flange yoke of driveline to pulley adapter Do not use longer bolts to mount Pulley Adapter to Pulley or Flange yoke to adapter than are supplied with mounting kit, if longer bolts are used they could go through adapter and pulley causing damage. Tighten the four bolts that retain the pulley adapter to the pulley now, it will be easier than trying to tighten them later. (See Figure 3 & 4)

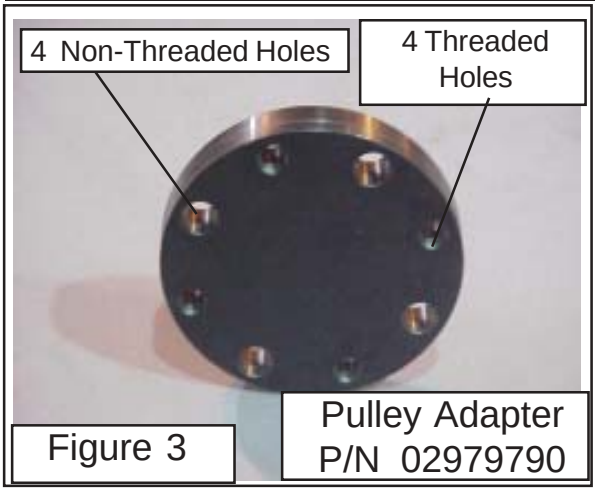

Figure 3

3. Install Shaft Half of Driveline with Flange Yoke. Note the driveline universal joints should be timed (See Figure 5). Slide the two driveline half assemblies apart and lay the tube half aside for now. Make certain that the four retaining bolts for the Pulley adapter to the crankshaft pulley have been tightened.

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4. **Check the length of the spline shaft of the driveline is a must**. To make certain you have the right driveshaft, measure the shaft, it should be 12-1/2" long (Measure Shaft Only). If you would need to cut the shaft, the correct way to cut this shaft is with a saw, after cutting use a file & grinder to chamfer the cut end and clean the splines. **DO NOT cut shaft with a Torch** as this will change the hardness of the shaft.

5. From the side of the tractor (LH side) slide the Shaft Half of driveline shaft end first down into the opening below the radiator from engine side, insert it through the existing hole and/or cut hole until the shaft is pointed toward the front of the tractor, and the flange yoke is over far enough to align with the four threaded pulley adapter holes.

6. Align the four holes in the flange yoke of driveline with the four threaded holes in the pulley adapter. Install the four retaining 7/16" X 1-1/4" long bolts (P/N 02976344) and 7/16" lockwasher (P/N 00022200) into flange yoke into adapter, tighten them at this time. These four bolts can be tightened by using a long socket extension run through along side the driveline shaft. If the driveshaft needs to be turned to reach the pulley adapter mounting bolts. Insert the tube end of the driveshaft over the shaft end of driveshaft, slide a bar through the yoke of the driveshaft and this will allow you to turn the pulley adapter to reach hard to get to bolts (See Figure 7 & 17).

7. Set the tube end of driveshaft aside for now as it will be installed later. But always remember the driveline universal joint must be aligned (timed) when assembling the driveline halves.

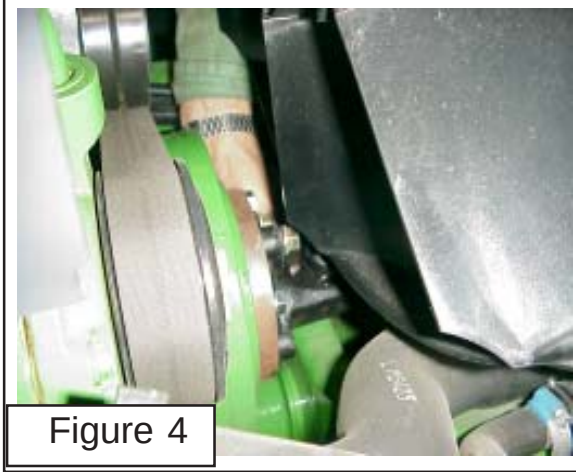
Figure 4

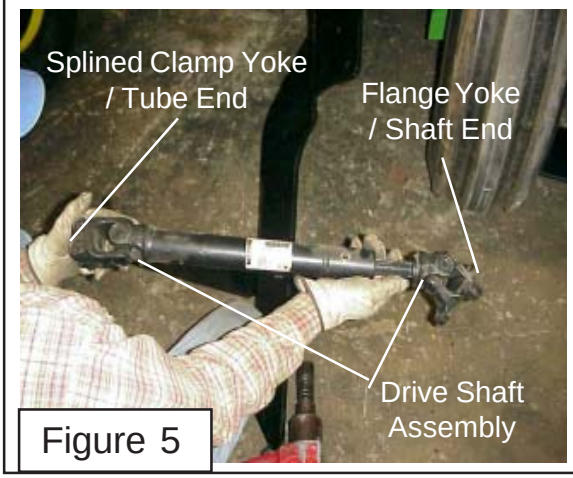

Figure 5

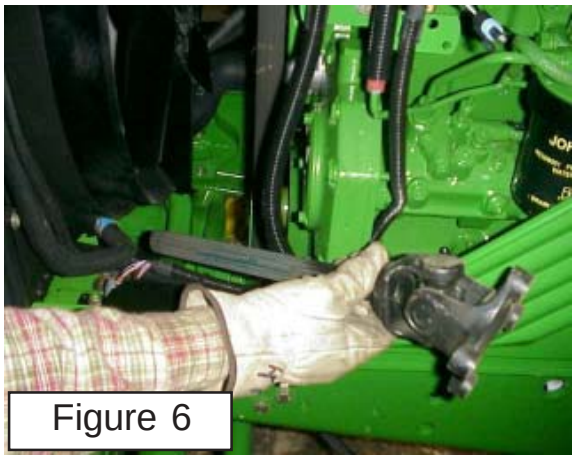
Figure 6

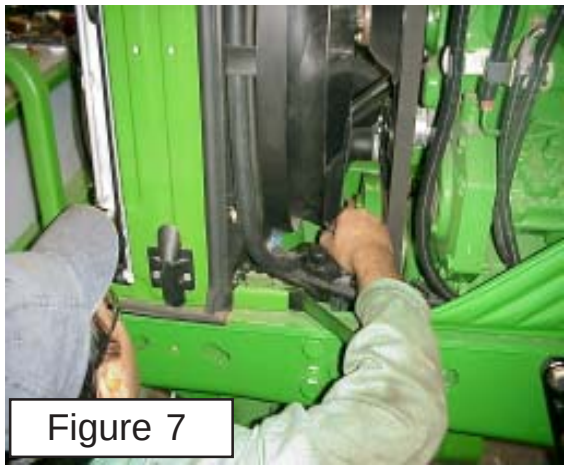
Figure 7

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Pump / Driveshaft Assembly Instructions

Install Tank Rail Weldments:

1. Install Tank Rails. The tank mount plates (P/N 02981382 LH and RH are the same part number and will fit either side) can be installed before driveshaft to engine or after. These will bolt on using the two holes to the back of the tank mount plate. This will need to be done before the hydraulic tank can be mounted, do not tighten these two bolts (two each side) now as if they are left a bit loose it will be easier to align the hydraulic tank between them later. (See Figure 8, 9 & 10) .

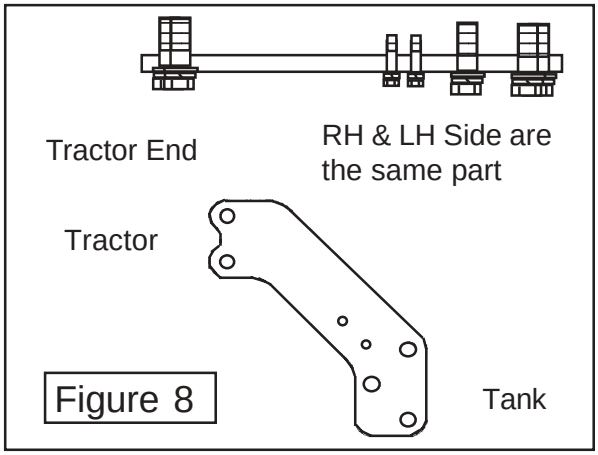

Figure 8

Figure 9

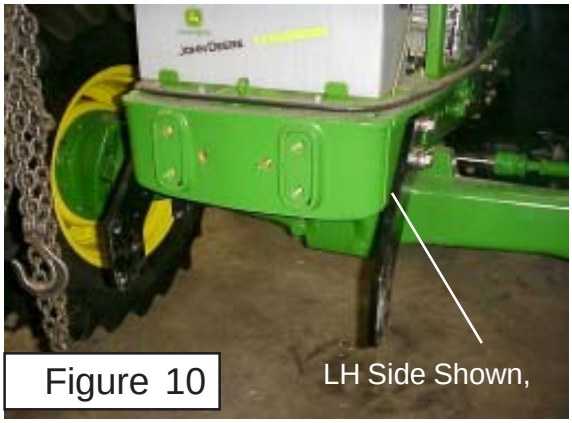

Figure 10

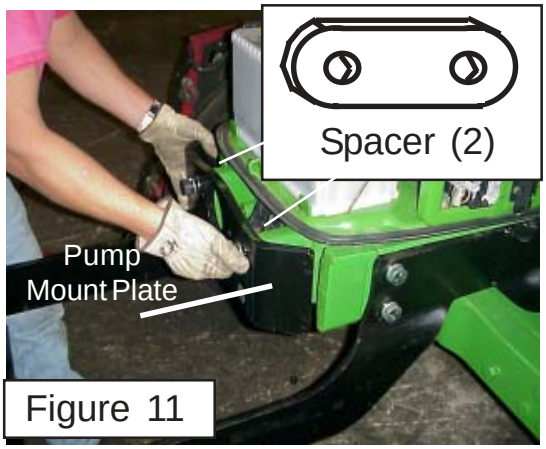

Figure 11

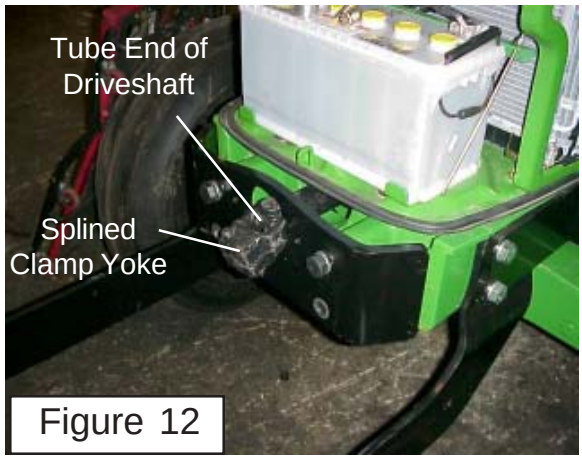

Figure 12

Installing Pump Mount Plate & Tube End of Driveshaft:

1. Install Pump Mount Plate. Install Front Pump Plate **(See Figure 11)** use the 2 Spacers on the JD , Do not install Pump Mount Plate without using these Spacers. The Spacers are for Tractor Hood Clearance. Insert the 4 bolts and lock washers into Pump Mount Plate and spacers **(See Figure 11)**, tighten them to required Torque (See Bolt Torque Chart).

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Pump / Driveshaft Assembly Instructions

Installing Pump Mount Plate & Tube End of Driveshaft:

2. Install Tube End of Driveline / Pump End. Slide the Tube half of driveshaft through Pump Mount Plate and Tractor Crankshaft Access Hole **(See Figure 12 & 13).** You will have to align the Universal joints when doing this (time the Driveshaft). Slide the two together where the Universal are in time **(See Figure 5)**, this will help the driveshaft to operate smoothly.

3. Loosen Splined Clamp Yoke. Insert a bar through the Yoke to hold Driveshaft up and to help loosen the Bolts in the clamp Yoke **(See Figure 14)**. This can be loosened with a hand Wrench or a Socket whichever is easier for you **(See Figure 14).** Some times it is easier to test fit the Tube End of Driveshaft to the Pump while the Pump is on the bench.

4. Remove Pump Shipping Bracket. The pump is shipped using a bracket that bolts to the pump and the tank assembly. Before pump can be installed it will have to be unbolted from pump and tank. The shipping bracket is for shipping only and will not be used. When unbolting pump from tank assembly there are hoses that will have to be disconnected from pump as tank to pump hoses (filters are connected when assembly is shipped. Caution must be taken when disconnecting these fittings and/ or hoses to keep the capped to keep contamination out of them.

5. Coat Pump Shaft w/ Anti-Seize Compound. Coating the pump shaft with a quality Anti-Seize Compound will help protect the shaft and possibly make it easier if there is a need to disassemble. (See Figure 16). Hoses will have to be disconnected so pump can be removed from tank assembly during pump mounting. All hose and fittings need to be covered and sealed to keep them free of contamination. A recommended way to do this is sandwich bags and rubber bands that will work well.

Figure 13

Figure 14

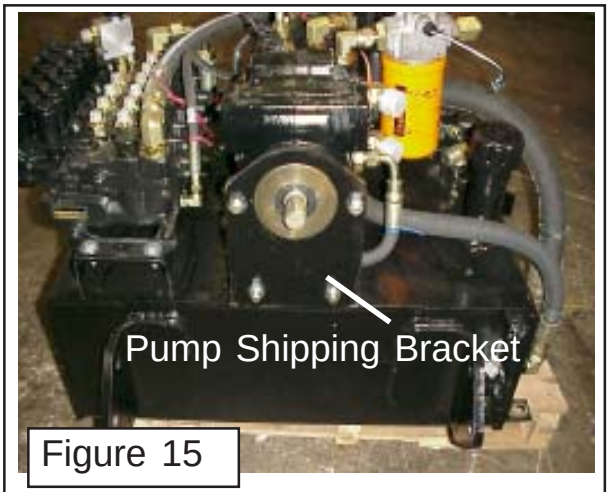

Figure 15

Figure 16

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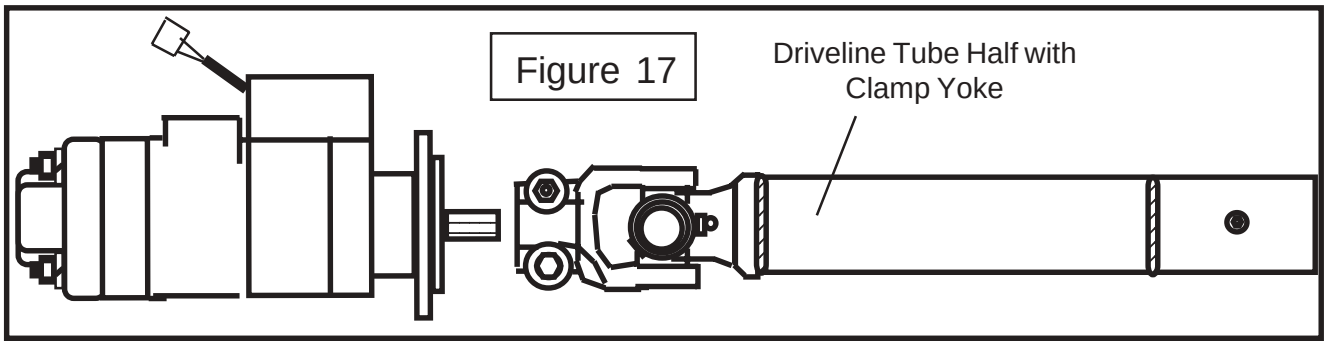
Pump / Driveshaft Assembly Instructions

Installing Driveline Half to Pump :

1. Install Pump to Driveline Half. The pump is heavy and will be best to lift it with overhead hoist (See Figure 18). With the tube half of driveline installed into tractor (align u-joints) and a bar through the yoke (See Figure 14) install the pump shaft into the clamp yoke, (See Figure 17 Install the clamp yoke of the tube half of driveline onto the pump, slide the clamp yoke on pump shaft until you have about 1/8" to 1/4" gap between yoke and pump. Do not install yoke so far on pump shaft that yoke will rub against pump in anyway. Tighten the two bolts and nuts on clamp yoke at this time. (See Figure 17, 18, 19 & 20)

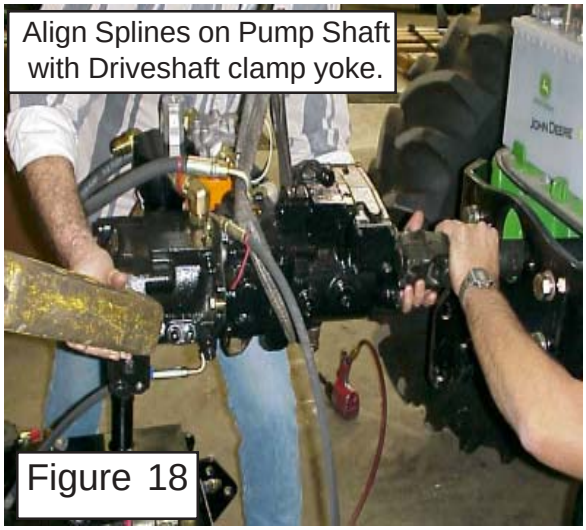


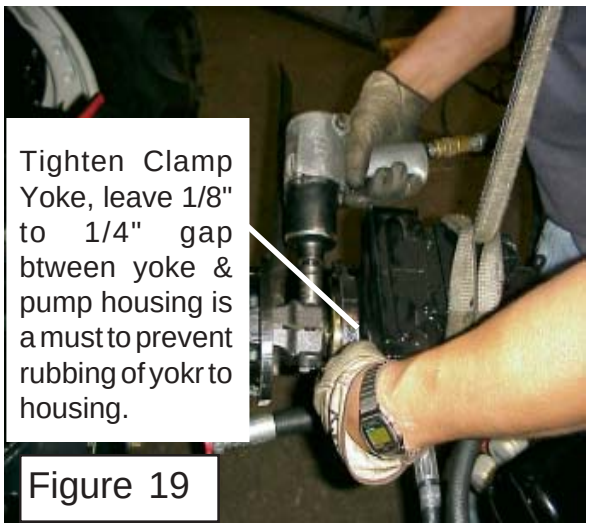
Installing Pump to Pump Mount Weldment :

1. Install Pump to Pump Mount Weldment. The Pump has the tube half of driveline attached and clamp yoke tightened. To install the pump and driveline half it is best to use an assistant or overhead hoist to help you align the drivelines halves as they are slid together, the Driveline **must** be timed (universal joints aligned the same) as shown in the pump & driveline schematic on (See Figure 5 through 20).. Slide Driveline half and pump together until the shoulder on the pump slide in the hole on the pump mount weldment. (See Figure 20 & 21).

When installing the pump always keep ports sealed to keep them clean and free of contamination. The pump MUST be turned correctly. This can be done by making certain that the pump is mounted the same as it was on the hydraulic tank assembly when it was received.

Install the two 1/2" X 1-1/2" long pump mount bolts (P/N 02892000) and two 1/2" lockwashers (P/N 00001300). Tighten the two pump mounting bolts. (See Figure 21)





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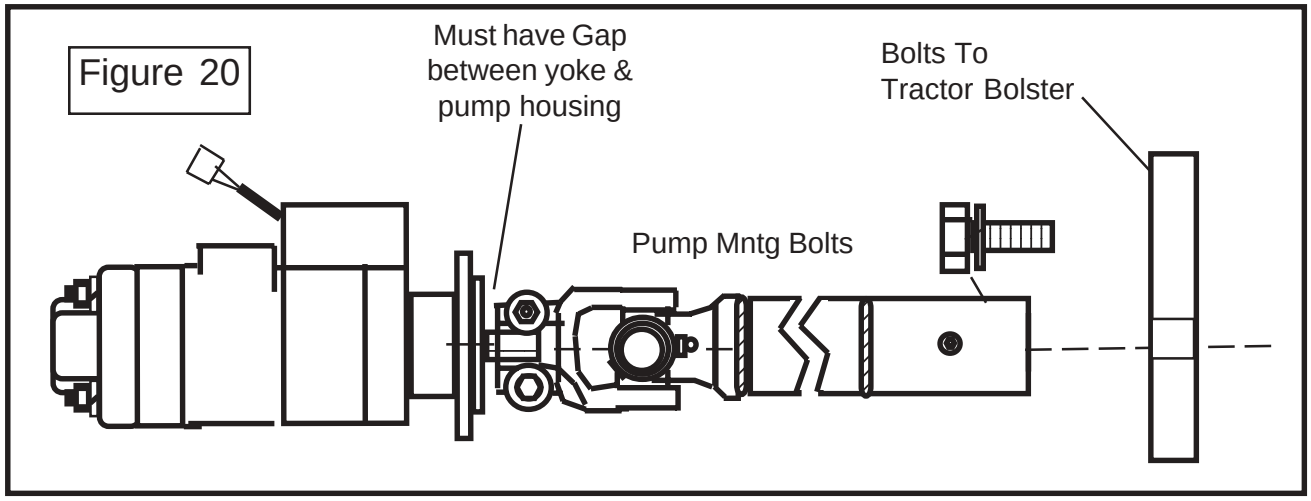
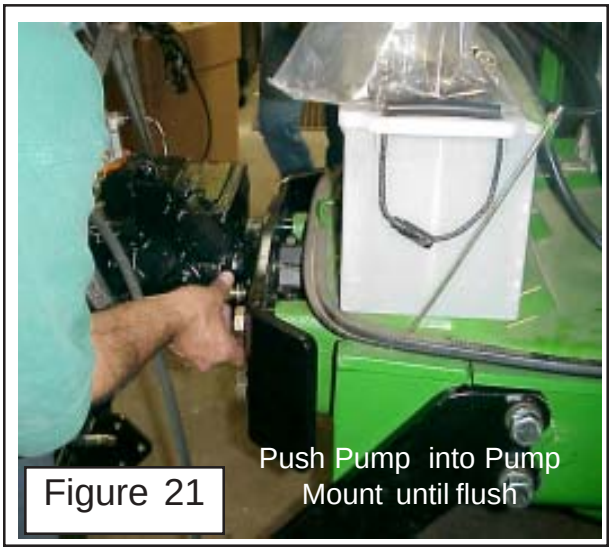


Check All Components and Bolts :

1. Check Driveshaft & Pump Installation. The pump and driveshaft installation needs to be recheck. Make certain that all bolts and lockwasher are installed. Make certain that the pump, pulley adapter and flange yoke of driveshaft are installed square where they bolt together. The pump has a flange on the housing that must be inserted into the hole of the pump mount plate. Make certain that all bolts have been torqued to the proper specifications (See Bolt Torque Chart). It is recommended that you mark each bolt as it is torqued, this can be done with a paint marker or a marker of you choice so long as the mark can seen at a glance, this will help not to miss torquing bolts. (See Pump Schematic at beginning of this section.).



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Section 5

MAVERICK

Hydraulic Tank & Control Valve Installation

John Deere Tractor JD-6615, 6715

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Hydraulic Tank & Control Valve Installation

Hydraulic Tank and Control Valve installation:

This Section covers the installation of the Hydraulic Tank and Control Valve Assembly. The Tank and valve are shipped as an assembly.

1. Locate Tank and Valve Assembly, this will need to be lifted with a hoist, the front bumper weldment is welded to the front of the tank from the factory.
2. All Tools, Work Area, Components and Workers Hands must remain Clean when working on any part of the Hydraulic System. All hoses and fittings should remain plugged till ready to install them to keep them clean.
3. All components should be rechecked for tightness and Hose routing also double checked.

Install Hydraulic Tank to Front of Tractor:

1. Hydraulic Tank and Valve Assembly, The Hydraulic Tank, Control Valve and Pump are shipped together (See Figure 1). The Pump should have already been mounted.

2. Install Hydraulic Tank & Control Valve Assembly. To install the tank and valve assembly you should use an over head hoist to lift Tank and Valve Assembly, as it is heavy and can be damaged if dropped. The hoist will also assist when aligning the mounting holes. There are three mounting tabs in the rear of the tank. Mount the three rear bolts, Three on each side. The hydraulic tank slide under pump and between the LH & RH Tank rails. Do not remove from hoist until tank has been bolted on and bolts tightened

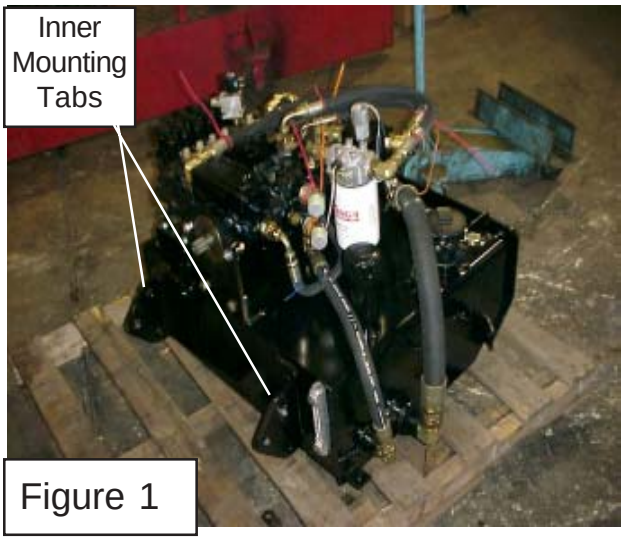

Figure 1

3. Rotate Fittings to make better access to Valve and tank connections, The fittings in the pump and valve may have to be rotated to make it more accessible when connecting the hoses.

4. Tighten Bolts Mounting Tank Rails. After the bolts that attach the tank to the tank rails are installed tighten the bolts that mount the tank rails to the tractor, these were left loose to make it easier to install the tank to them. Tighten the six bolts mounting tank to the rails (See Figure 2).

5. Reconnect Hose to Tank. The hose to the tank that were disconnected so the pump could be installed earlier will need to be reconnected now, make certain that any plugs used to cover hoses and pump fitting are removed before connecting hoses. Make Certain that all hoses are reconnected to the correct place, see the hydraulic hose illustration in this section. (See Figure 1A)

Figure 1A

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Hydraulic Tank & Control Valve Installation

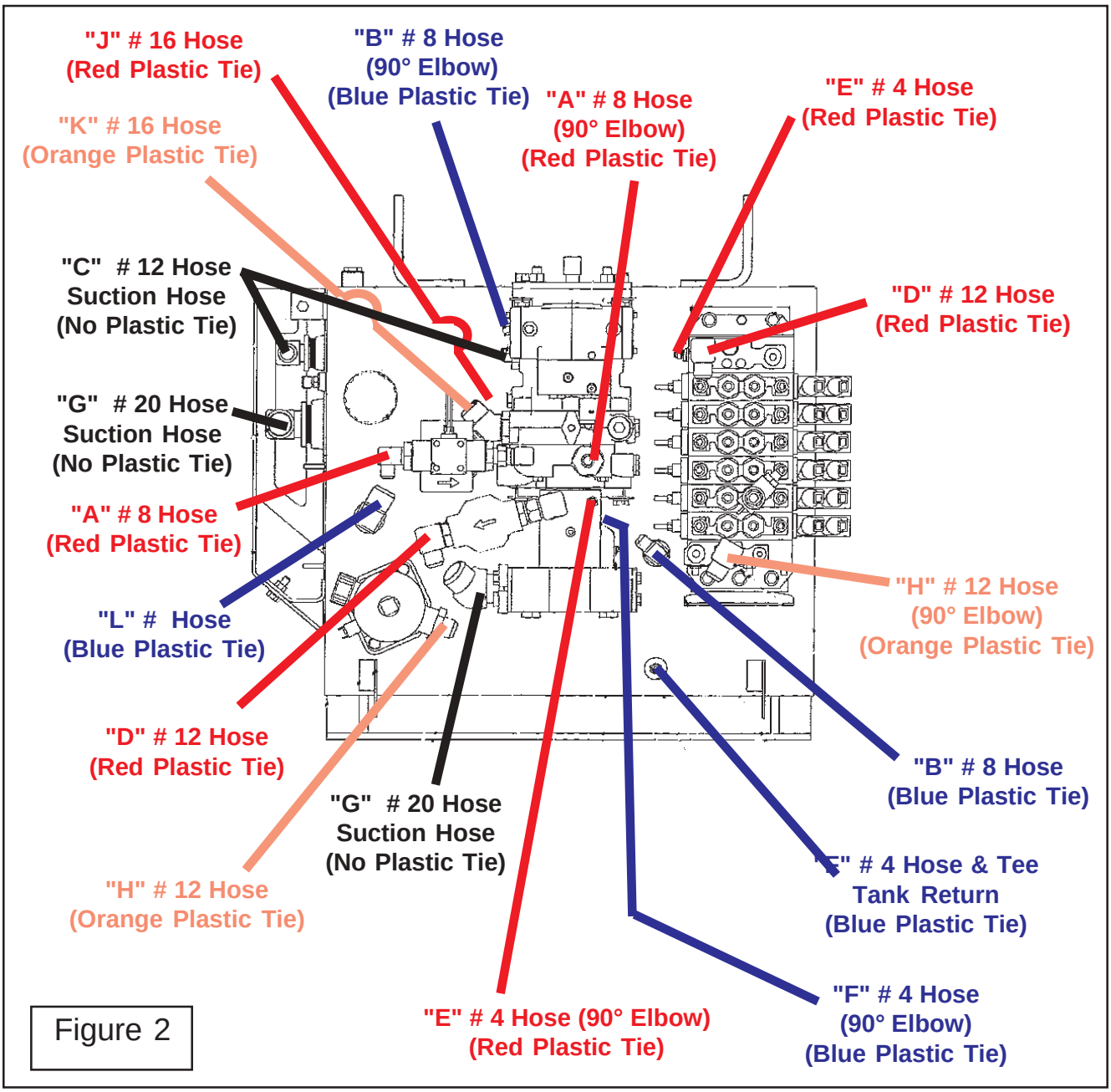

Figure 2

NOTE: Hoses are not shown in drawing above, this is for clarity. The hose routing is for the hoses which connect from one point to the other. Use the instructions and hose description listed to follow hose routing. Some hoses will be connected later, Boom hoses and valve hoses.

Example: Hose - A connects to one end marked A and the other end of hose connects to the other item marked A. This is done with the other letters as well, the hose must connect to the same letter markings on each end as in drawing. Some hose will be marked with a colored plastic tie.

Some hose will have a straight fitting or a 90° fitting. This is to allow hoses to be routed to where they clear other items, when connecting hose put the end on that has the correct fitting as noted in drawing with (90°) or the straight fitting if note marked hose routing that is to make hoses clear other items. Do Not connect hose to different letter items, all hose end must connect to the same letter on both ends.

TO ID HOSES: Always check Size, Length, Fittings and Color Plastic Tie to identify the hoses. Some hoses will have the same color tie but the size, length or fittings will be different.

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Hydraulic Tank Hose Routing

Hose Connections To Pump And Hydraulic Tank: (See Figure 2)

Item	Part No.	Qty.	Description
A	02981427	1	Hose, 8FJX - 8FJX 90° - 24" Lg. w/Red Tie (Charge Filter to Pump)
B	02981428	1	Hose, 8FJX - 8FJX 90° - 21" Lg. w/ Blu Tie (Case Drain to Tank)
C	02981429	1	Hose, 12FJX - 12FJX - 23" Lg. (Pump to Suction Filter) hose under pump and cannot be seen in drawing.
D	02981430	1	Hose, 12FJX - 12FJX - 31" Lg. w/ Red Tie (Pressure Filter to Supply)
E	02981431	1	Hose, 4FJX - 4FJX 90° - 35" Lg. w/ Red Tie (Pump Load Sense to Valve (PX) Connects to top side of pump as shown.
F	02981432	1	Hose, 4FJX - 4FJX 90° - 20" Lg. w/ Blu Tie (Pump Regulator to Tank) Connects to bottom side of pump not seen.
F	----------	1	Hose #4, Connects here w/ Tee Fitting (Connect to Base End Stabilizer Cyl)
G	02981433	1	Hose, 20FJX - 12FJX - 24" Lg. (Pump to Suction Filter)
H	02981462	1	Hose, 12FJX - 12FJX 90° - 20" Lg. w/ Org Tie (Valve Return to Tank)
J	----------	1	Hose, # 16 w/ Red Tie (Pressure from Pump to Motor) Bottom Port
K	----------	1	Hose, # 16 w/ Orange Tie (Oil Return from Motor) Top Port
L	----------	1	Hose. w/ Blue Tie (Oil Return from Oil Cooler to Tank)

Hose Connections Hydraulic Valve: (See Figure 3)

1. Fittings and Hose Connections to Valve: The fittings are installed in the valve when it is shipped from the factory, the Valve is mounted to the tank when it is shipped from the factory. The fittings will have caps and/or plugs covering all the openings to keep contamination out of the system. DO NOT remove any caps or plugs at this time. The valve is ONLY listed here to show which fittings are installed where on the valve. The hoses to the valve, with the exception of the pressure supply from pump to valve will not be connected until later after Boom has been installed (See Boom / Head Installation section.

Valve Fittings and Location: (See Figure 3)

Item	**Part No.**	**Qty**	**Description**
	02981888	**--**	**Valve & Fittings Assembly, 6 Spool**
1	02981370	1	Valve Assembly w/o Fittings
2	02090800	2	Adapter Hydraulic, Elbow 12MB - 12MJ 90°
3	02972177	11	Adapter Hydraulic, Straight 10MB - 6MJ
4	03200284	1	Adapter Hydraulic, Straight 6MB - 4MJ
5	02981889	1	Adapter Hydraulic, Straight 10MB - 6MJ
6	02972208	1	Valve Solenoid Assembly
7	02975438	1	Adapter Hydraulic, Straight 8MB - 8FJX
8	02981890	1	Adapter Hydraulic, Straight 8MB - 6MJ

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Directional Control Valve Fittings

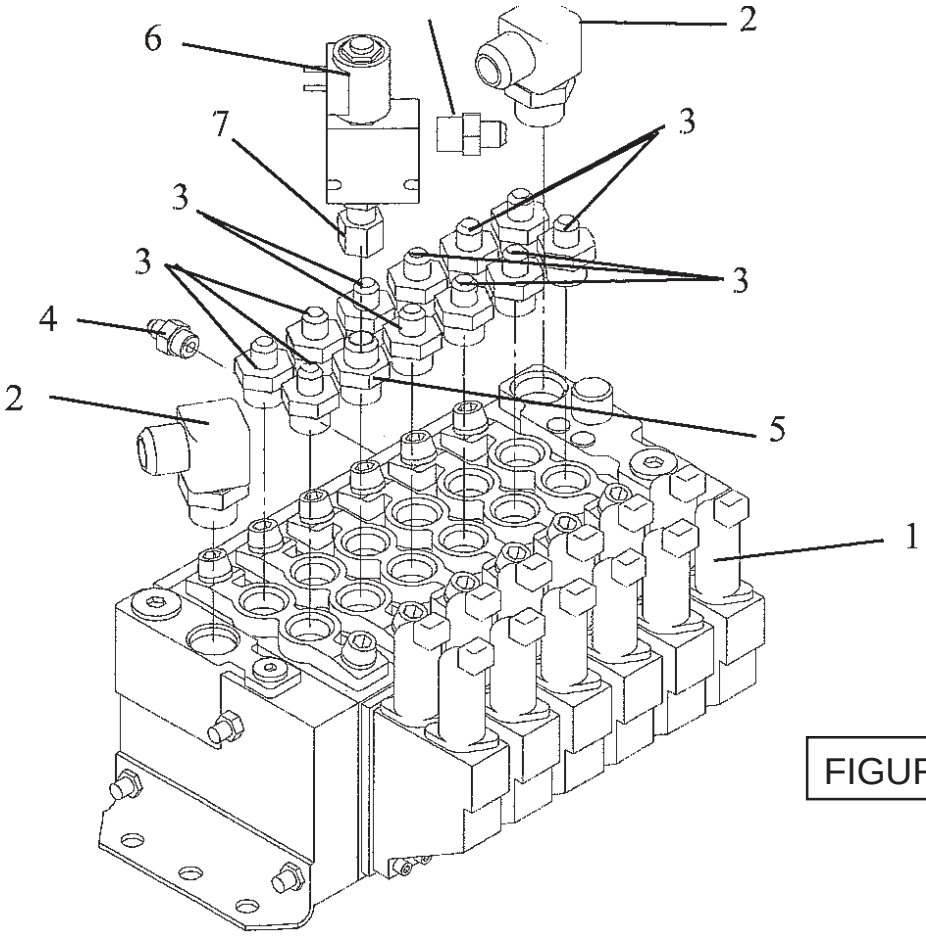
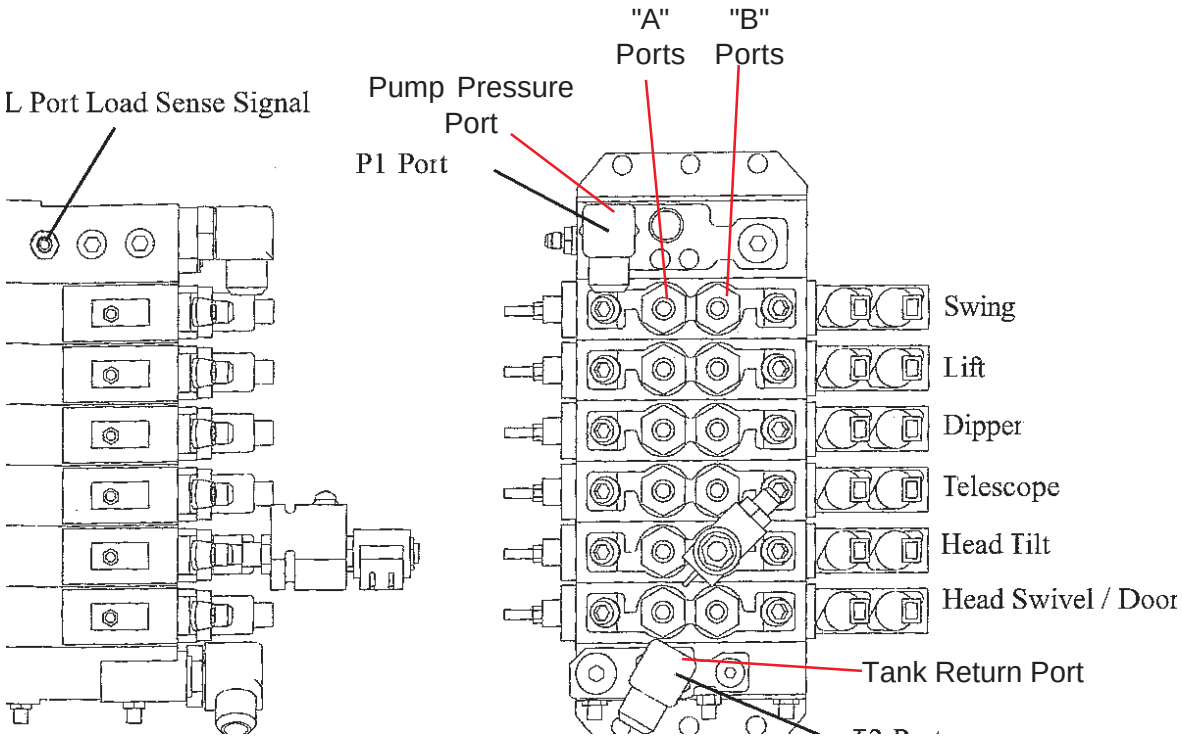


FIGURE 3



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HYDRAULIC HOSE CODES AT VALVE

Hydraulic Hose Band Mark Color Codes: Hose's and/or fittings are marked with a Color Coded Plastic Band around it. Some Bands are a solid Color and some are Colored with a Stripe. The purpose of the colored bands are to provide a quick reference for hose and port connection. A metal band is also attached to the hose, on that band is an Alamo Industrial Part Number for reference if needing a replacement hose. **Always Check Hose Size, Color Code & Part Number (See Figure 5)**

Boom Cylinder Circuit Hoses:

Color Tie	(Code)	Hose Size	Port	Diverter	Hyd. Function
Green	G	SAE # 6	A	---	Swing, Back (Rod End)
Green / White	G/W	SAE # 6	B	---	Swing, Forward (Base End)
Orange	OR	SAE # 6	A	---	Lift, Down (Rod End)
Orange / White	OR/W	SAE # 6	B	---	Lift, Up (Base End)
Blue	B	SAE # 6	A	---	Dipper, In (Rod End)
Blue / White	B/W	SAE # 6	B	---	Dipper, Out (Base End)
Yellow	Y	SAE # 6	A	---	Telescope, In (Rod End)
Yellow / White	Y/W	SAE # 6	B	---	Telescope, Out (Base End)
Red	R	SAE # 6	B	---	Head Tilt, Up (Rod End)
Red / White	R/W	SAE # 6	A	---	Head Tilt, Down (Base End)
Green	G	SAE # 4	A	P2	Control Valve tor Diverter valve
Green / White	G/W	SAE #4	B	P1	Control Valve to Diverter Valve
Green	G	SAE # 4	---	C4	Swivel, CW (Rod End)
Green / White	G/W	SAE # 4	---	C1	Swivel, CCW (Base End)
Yellow	Y	SAE # 4	---	C3	Door, Open (Rod End)
Yellow / White	Y/W	SAE # 4	--	C2	Door, Closed (Base End)
Orange	OR	SAE#12	T	---	Valve Return To Tank
Red	R	SAE#12	P	--	Pressure to Valve.

Motor Circuit Hoses to Boom Connections: (Listed as reference)

Color Tie	(Code)	Hose Size		Hyd. Function
Red	R	SAE # 16	--	Pressure Flow to Motor
Orange	OR	SAE # 16	--	Return Flow From Motor
Blue	B	SAE # 8	--	Case Flow From Motor to Boom
Blue	B	SAE # 12	--	Case Flow at Boom to Tank

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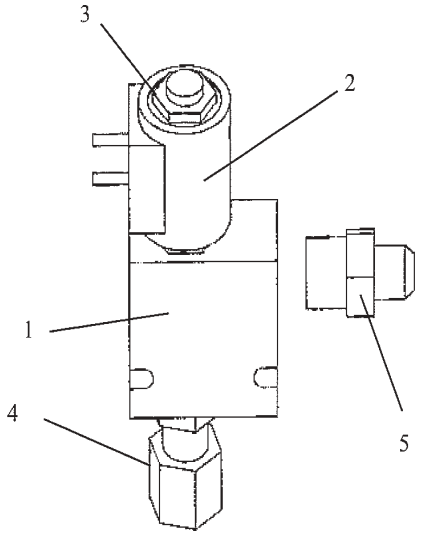
HYDRAULIC LOCK VALVE: (Head Tilt Function)

An Electric Solenoid Operated Hydraulic Lock Valve (Figure 4) is incorporated in the Head Tilt Function to prevent excessive (Head Lift Cylinder) leak down during storage or transportation. The Solenoid which operates this valve is normally in the Locked position until Head Lowering function is actuated at Joystick. When Joystick is actuated to lower Head an electric signal is sent to solenoid to open Lock valve. When the function to raise the Head is activated there is no electric signal from Joystick. The pressure against the valve when head is being raised will force Valve open like a relief Valve allowing Oil to pass through it. If this valve will not open it could stop head from lifting or dropping. The valve is plumbed into the Hydraulic Circuitry of the Head Tilt Function and is located near the Control Valve.



Hydraulic Lock Valve

Item	Part No.	Qty.	Description
	02972208	--	Solenoid Valve Assembly
1	02971425	1	Seal Kit, f/ solenoid Valve
2	02975198	1	Coil, 12V- DC w/Dual 8-32NF Studs
3	02975199	1	Cartridge, Solenoid Valve
4	02975438	1	Adapter Hydraulic, Straight 8MB-6FJX
5	02981890	1	Adapter Hydraulic, Straight 5MB - 6MJ

FIGURE 4

Diverter Valve.:

The Diverter Valve bolts onto the front frame mount bracket on the LH side of the tractor, the holes are in the bracket (See Figure 5 , 6 & 7). The Diverter valve is a electrical operated valve that allows the hydraulic pressure to be shared to operate two (or more if valves are stacked) functions with a single pressure supply. This valve is strictly a diverter valve and is designed to direct the pressure, not regulate the flow or pressure.

The Port openings on this diverter valve are marked with letter number codes which show which port is connected to which hose and where that hose connect on other end (See Figure 5, 4 & 7)

Port	Function & Connection
P1	Hose Hyd Pressure f/ Door / Swivel (B) Port on Control Valve (Green/White Tie)
P2	Hose Hyd Return to Door / Swivel (A) Port on Control Valve (Green Tie)
C1	Hose to Head Swivel Cylinder Base End (Green/White Tie)
C2	Hose to Door Cylinder Base End (Yellow/White Tie)
C3	Hose to Door Cylinder Rod End (Yellow Tie)
C4	Hose to Head Swivel Cylinder Rod End (Green Tie)

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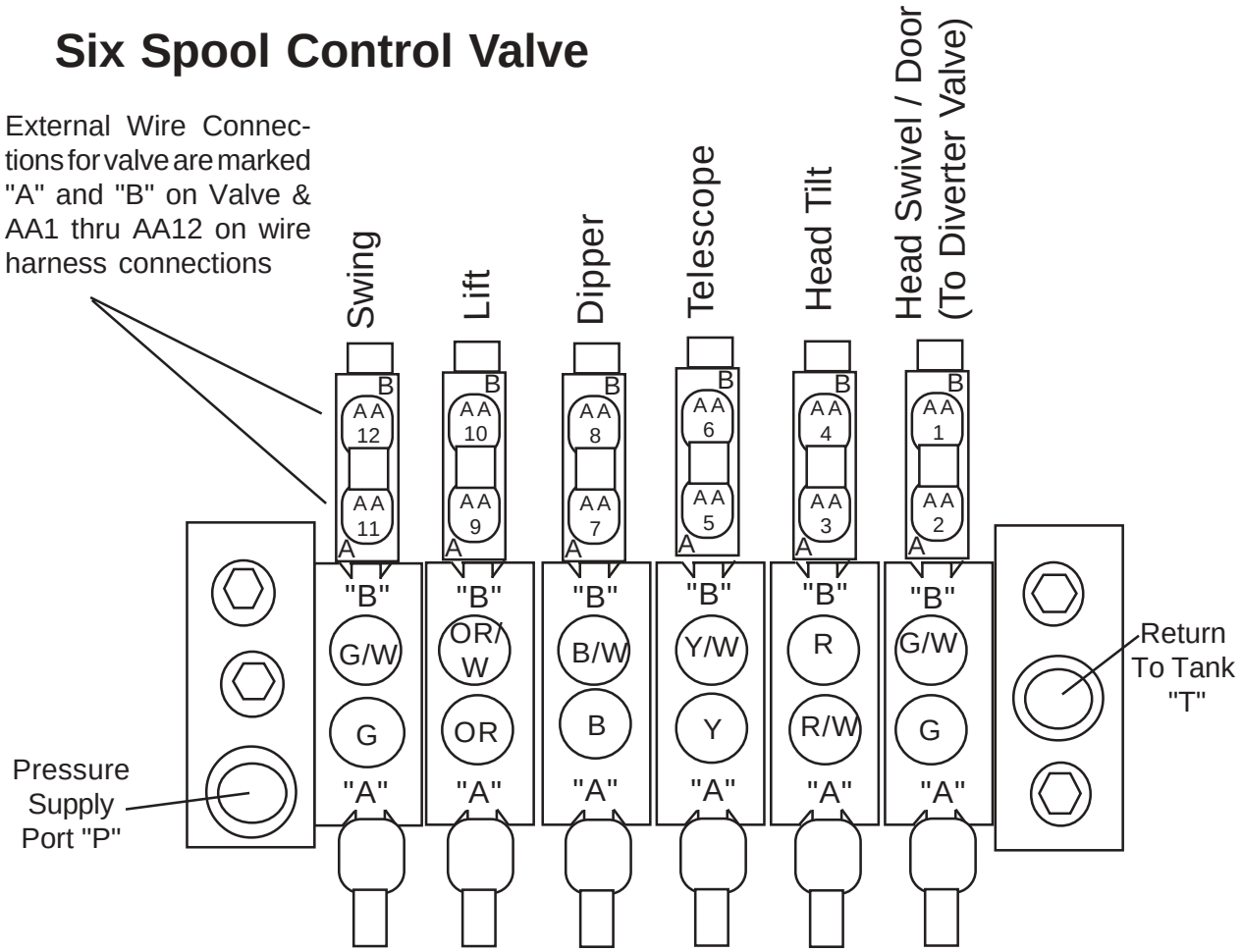
Hydraulic Hose Connections

Six Spool Control Valve



Diverter Valve

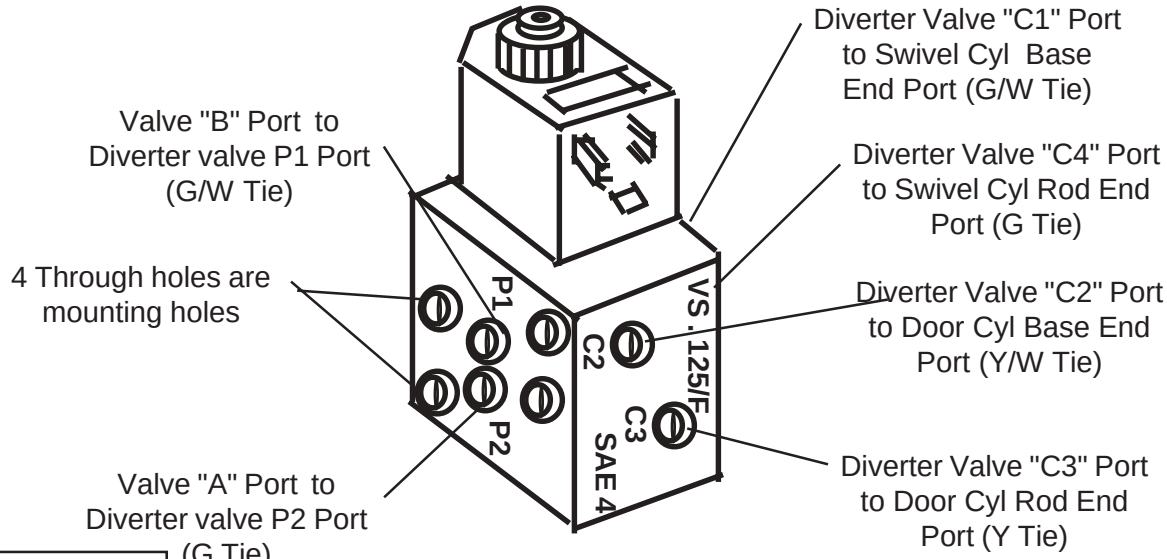

Diverter Valve "C1" Port to Swivel Cyl Base End Port (G/W Tie)
Valve "B" Port to Diverter valve P1 Port (G/W Tie)
Diverter Valve "C4" Port to Swivel Cyl Rod End Port (G Tie)
4 Through holes are mounting holes
Diverter Valve "C2" Port to Door Cyl Base End Port (Y/W Tie)
P1
P2
C2
C3
VS .125/F
SAE 4
Diverter Valve "C3" Port to Door Cyl Rod End Port (Y Tie)
Valve "A" Port to Diverter valve P2 Port (G Tie)

FIGURE 5

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Oil Cooler / Fan Assembly

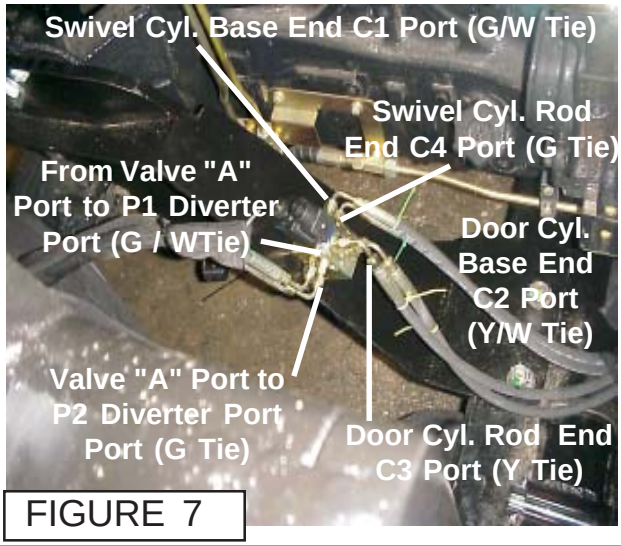
Connecting Oil Cooler And Fan Assembly:

1. Oil Cooler / Fan Assembly. The Oil Cooler and Fan Assembly connects to the two tank mounting rails behind the tank . The mounting holes are already in the tank mounting rails (See Figure 1A & 9). The tank hoses will have two connections, one that is the motor case drain from the boom which is a #16 hose with a blue plastic tie. The other hose is a short # 16 hose that connects to the cooler and them to the tank. These will be connected later when the boom is mounted. (See Figure 9)

2. Oil Cooler Operation Design Information. The Oil cooler / fan assembly is for cooling the oil being returned from the Motor Case Drain. The fan is connected to the control box and is turned on & off automatically. It set to run on a program that will run the fan in the cooling rotation for a designated time, then stop, reverse the rotation (cycle to clean debris off of cooler), then stop and reverse the fan again and begin the cycle all over again.

The connection to the cooler on the exterior wire harness is marked with code R1. The connection from the fan will have two wires, a Blue (+ connection) and a black (- connection) (See Figure 8).

FIGURE 6


Swivel Cyl. Base End C1 Port (G/W Tie)
Swivel Cyl. Rod End C4 Port (G Tie)
From Valve "A" Port to P1 Diverter Port (G / WTie)
Door Cyl. Base End C2 Port (Y/W Tie)
Valve "A" Port to P2 Diverter Port Port (G Tie)
Door Cyl. Rod End C3 Port (Y Tie)
FIGURE 7

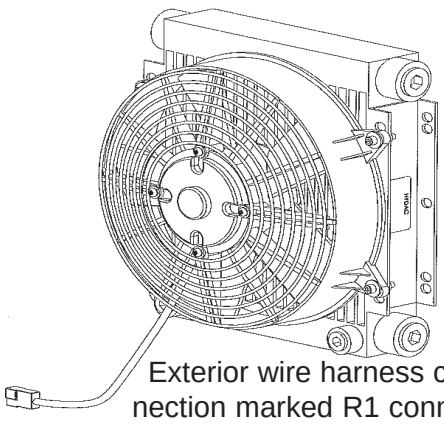


FIGURE 8

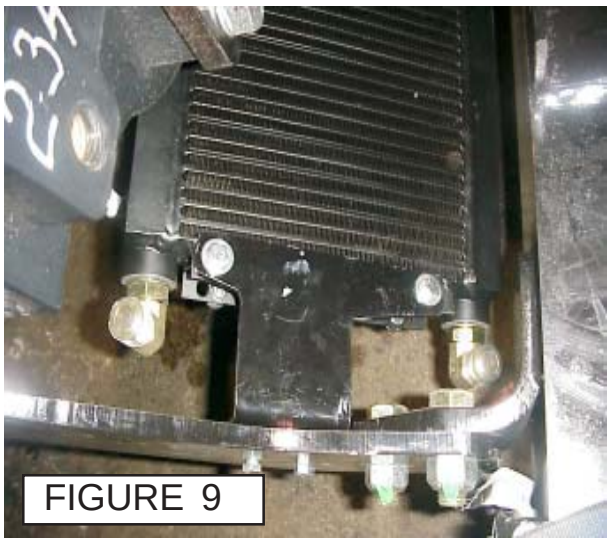


FIGURE 9

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NOTES

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Section 6

Maverick Boom

Main Frame Installation

John Deere Tractor
JD-6615, 6715

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Under Mount frame Asy:

1. Before beginning any repairs on this section make certain the boom is extended outward to full extend and laying on the floor. Before removing the Boom Pivot Pin support the boom with an overhead hoist so as when Pie is removed boom can be lifted out of the way. NEVER REMOVE ANY PINS OR BOLTS unless boom is supported at pivot end and head end is resting on the floor.

2. The under mount frame asy is made up of the Turret, Center Section Frame Weldment, Boom Mount, Swing Cylinders, Swing Cylinder Trunnion Mount, Turret Cylinder Link and Counter Weight.

3. The Turret Asy will be shipped assembled to the Boom mount with the hoses and cylinders plus attaching hardware assembled to it.

4. The Swing Cylinders have replaceable mounting bushing which can be replaced by removing the bottom cover and trunnion mount weldment. The Cylinders can be dropped down enough to replace the bushing. The replace the Trunnion Mount weldment. Also by removing the cylinders the Turret Cylinder link can be removed.

5. The Turret assembly has a large bearing assembly bolted to it and then bolted to the Boom Mount. This Bearing CANNOT be removed (or replaced) unless the Boom is disconnected from it first. When disconnecting boom make certain the boom is supported as not to fall (See Step 1). The Bolts retaining the turret to the bearing and the bolts connecting bearing to the Boom Mount MUST be torqued to the required specification, This is very critical. See the Bolt Torque Chart in the beginning of this manual.

6. DO NOT remove any mount pins and/or bolts unless the components are supported properly to prevent them from falling

7. The Turret Bearing Assembly has 3 grease fittings, each 120° apart. All three of these grease fittings must be greased because of the diameter of the bearing this to ensure an even distribution of grease though out the diameter of the bearing assembly.

8. If the hoses for the swing cylinders are disconnected or replaced make certain that they are reconnected correctly as shown in this section (Swing Cylinder Hose Routing). If the hoses are not connected correctly the swing will not function correctly.

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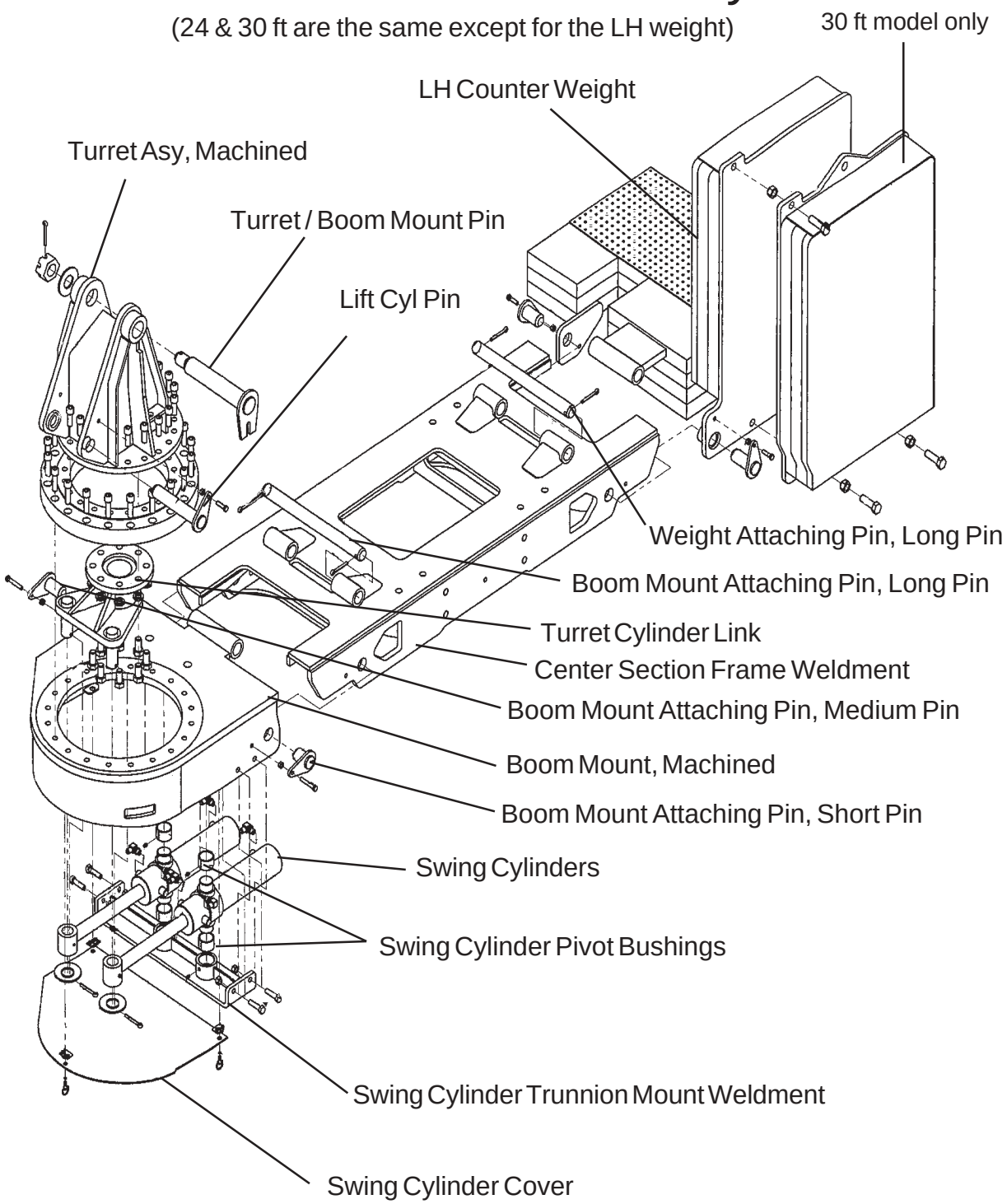
Under Mount Frame Asy

(24 & 30 ft are the same except for the LH weight)


30 ft model only
LH Counter Weight
Turret Asy, Machined
Turret / Boom Mount Pin
Lift Cyl Pin
Weight Attaching Pin, Long Pin
Boom Mount Attaching Pin, Long Pin
Turret Cylinder Link
Center Section Frame Weldment
Boom Mount Attaching Pin, Medium Pin
Boom Mount, Machined
Boom Mount Attaching Pin, Short Pin
Swing Cylinders
Swing Cylinder Pivot Bushings
Swing Cylinder Trunnion Mount Weldment
Swing Cylinder Cover

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Frame Installation:

1. Frame Components. The frame will include the rear axle mounts, a LH & RH Frame rail. Two front frame mounts, a LH & RH. One center frame weldment. (See Figure 17, 18, 19, 20 & 21)

2. Install Frame Components. The Frame components will only fit one way. The Frame components are a Bolt together assembly no welding will be required. The Frame components will bolt together and to the tractor using mostly 3/4" and/or 20 mm bolts. Each 3/4" & 20 mm bolt will use hardened flat washers, one on the head side when bolts go into the tractor castings. Two washers used when bolts use a nut and go through the frame. These hardened washers are important.

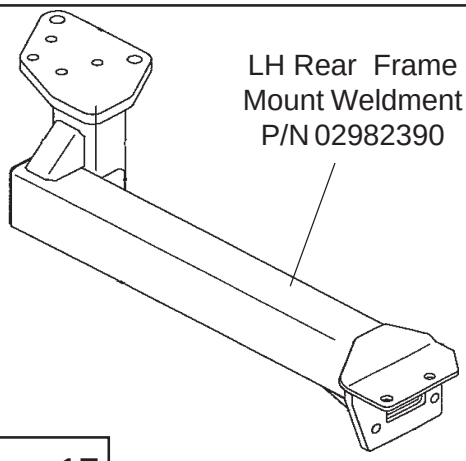

Figure 17

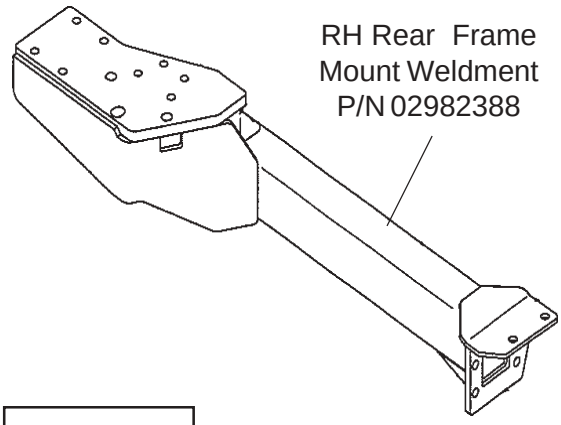

Figure 18

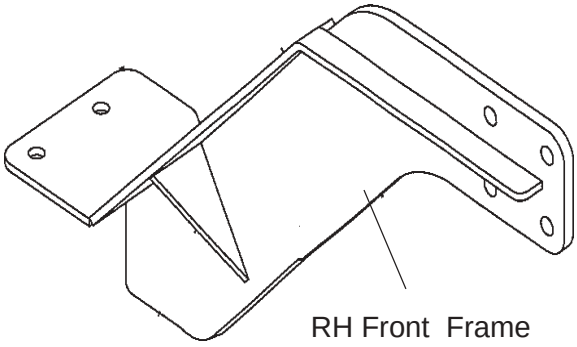

Figure 19

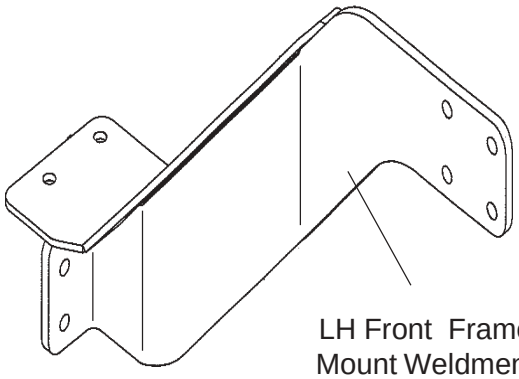

Figure 20

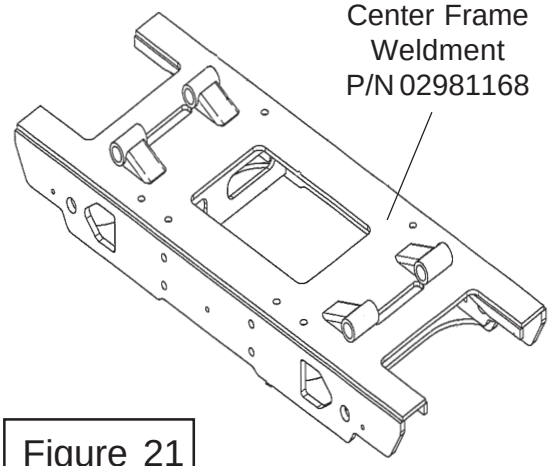

Figure 21

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3. Install Rear Frame Mount Rails. Rear frame rails consist of a LH & RH. We have started with the Left Hand Rail. Using a floor jack to lift the rail up under the rear axle. Install the bolts up and into the tractors rear axle housing and snug the bolts down. Support the frame rail with a jack stand (or leave the floor jack under it). (See Figure 17 & 22).

The RH Rear Frame Rail will basically install the same, bolts up under the tractor axle housing with the three point stabilizer bolt back up under frame rail (See Figure 18 & 23). The RH Rail looks different at the rear because the boom rest will bolt here later.

4. Install Front Frame Mount Rails. The Front Frame mount rails will consist of a RH & LH (See Figure 19, 20, 24 & 25) These will only fit one way as they have a gusset reinforcement on one side that will be showing to the outside when installed. These can be lifted by the technician installing them. The LH and RH will install the same way, Using 4 bolts each that screw into nuts on the inside of tractor frmae on the side of the tractor (See Figure 24 & 25). Make certain that all of these mounting bolts have hardened flatwashers on on both side of frame, Bolt heads or nuts should not be againsr frame.

Figure 22

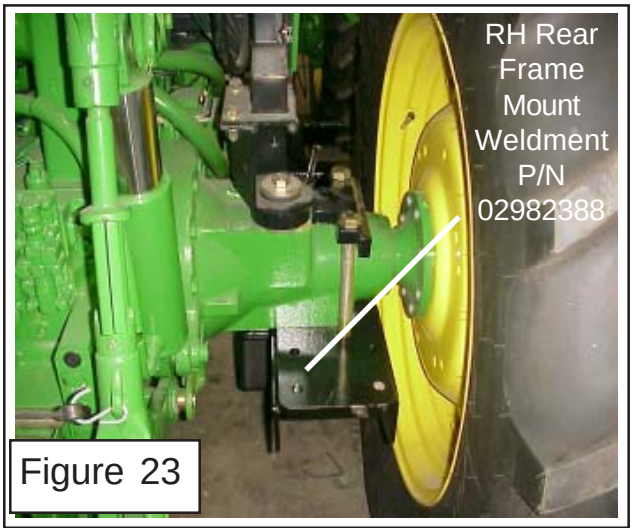

Figure 23

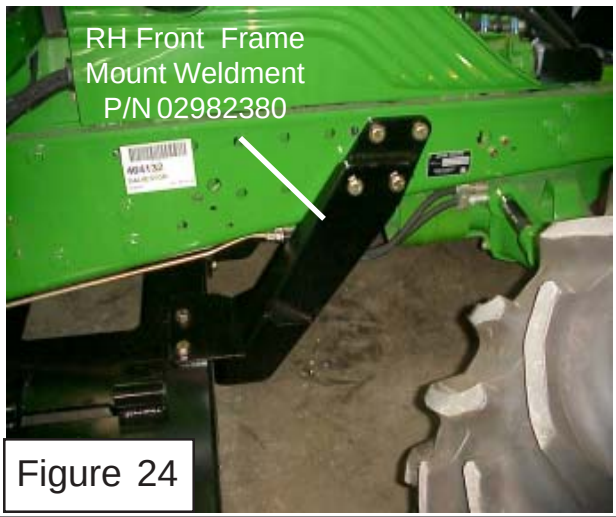

Figure 24

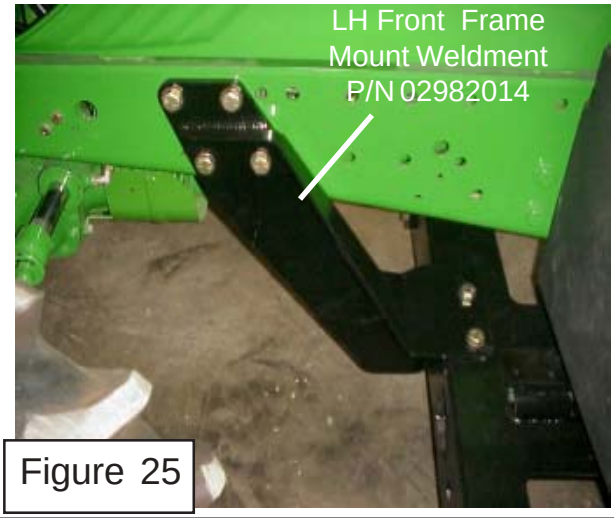

Figure 25

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5. Install Center Frame Weldment. The Center Frame Weldment has a front and a back side (LH & RH side). The Center frame must be installed with the two openings (See Figure 26) toward the front of the tractor. These openings are to allow for the movement of the swing cylinders when moving the boom to the boom rest position.

IMPORTANT NOTE: When bolting the center frame up to the front and rear frame mounting rails the bolts on the RH turret side must have the bolts installed from the bottom with the bolt heads on bottom under center under frame and the nuts on top (See Figure 27 showing nuts on top). The reason the nuts must be on top is so the bolts will not hit the swing cylinders when the turret assembly has been mounted. The Bolts that are used to mount center frame are not the same lentgh. The 8 bolts for the rear fame bracts (bolts that face the rear of the tractor) will be 3/4" X 3-1/2" long. The other twelve bolts will be 3/4" X 2-1/4" long. All 20 Bolts that at are used to mount center frame MUST have hardened flat washers install on both sides, one under Bolt Head and one under Nut (See Figure 26 & 27)

Using floor jacks (or Fork lift) position the center frame weldment up under the tractor (See Figure 27). The center frame weldment will bolt to the front and rear mounting rails on both sides. Make Certain to use hardened flatwashers on all 3/4" and 20 mm bolts, when using nut on bolts it will need two hardened washers, one on each side (See Figure 27) . Double check the frame mounting bolt tightness.

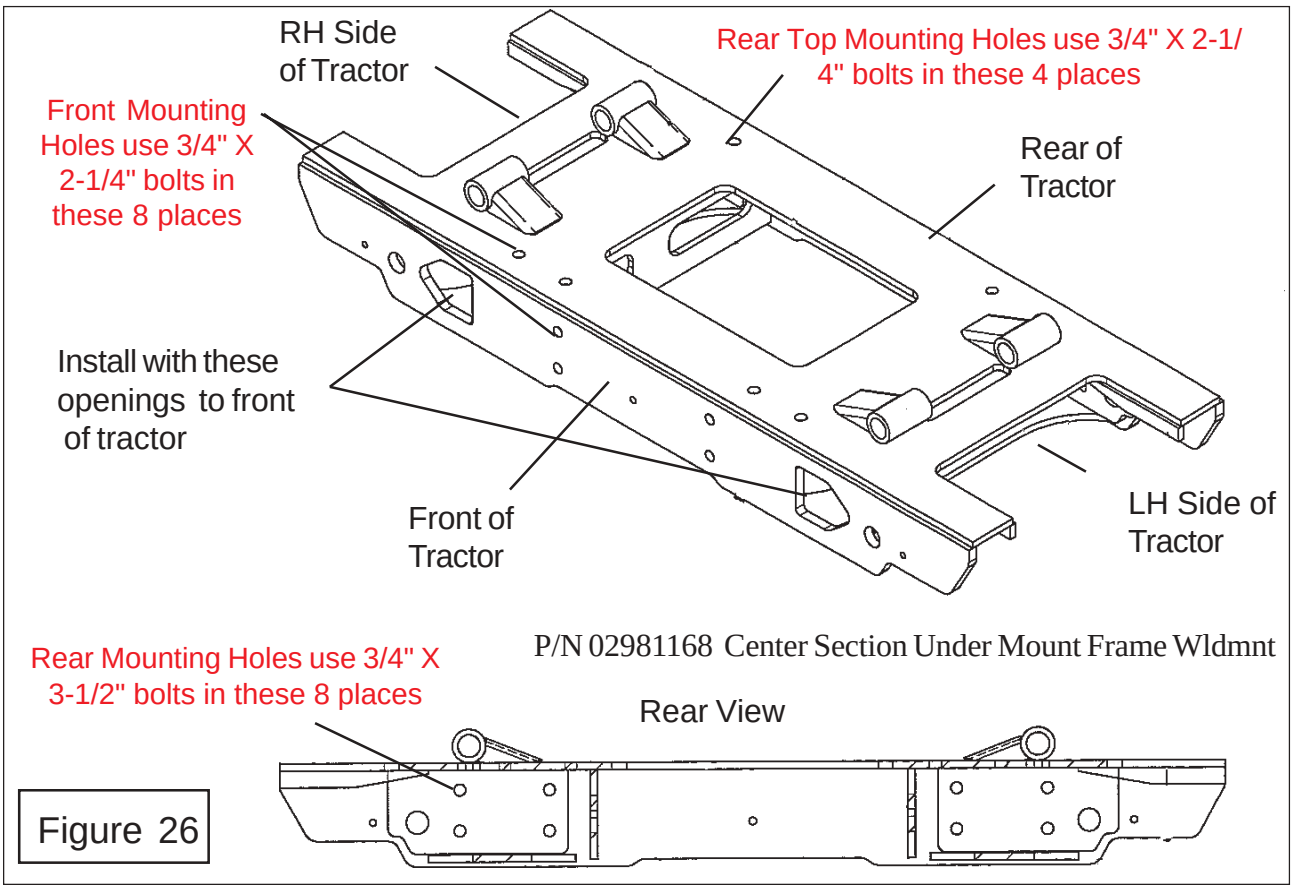
RH Side of Tractor
Rear Top Mounting Holes use 3/4" X 2-1/4" bolts in these 4 places
Front Mounting Holes use 3/4" X 2-1/4" bolts in these 8 places
Rear of Tractor
Install with these openings to front of tractor
Front of Tractor
LH Side of Tractor
P/N 02981168 Center Section Under Mount Frame Wldmnt
Rear Mounting Holes use 3/4" X 3-1/2" bolts in these 8 places
Rear View

Figure 26

6. Install Boom Rest Weldment. The boom rest weldment for the 24 foot boom and the 30 ft. boom are not the same (See Figure 29). The boom rest weldment bolts to the RH Side on the Rear Frame mount weldment behind the tractor axle weldment (See Figure 30). It is recommended that this be installed using an overhead hoist and supported by the hoist until boom rest and support brace (See Figure 28 & 30) are completely installed. The Boom Rest Support also serves as the top axle strap for the RH Axle mount (See Figure 30).

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7. Install LH Axle Strap. The Axle Strap bolts down over the top of the Axle (LH Side) and bolts run through the Rear Frame rails. The RH Side the axle strap is part of the boom support brace weldment and also bolts down over the axle with the bolts through the rear frame rail (See Figure 30 & 31)

Make certain that all the bolts mounting the frame components and the boom rest are properly torqued, see the bolt torque chart.

8. Reinstall LH Rear Tire and Wheel. Reinstall the LH rear Tire and Wheel now if it has not already been done. Use a hoist to lift and secure the rear tires is recommended as they are very heavy.

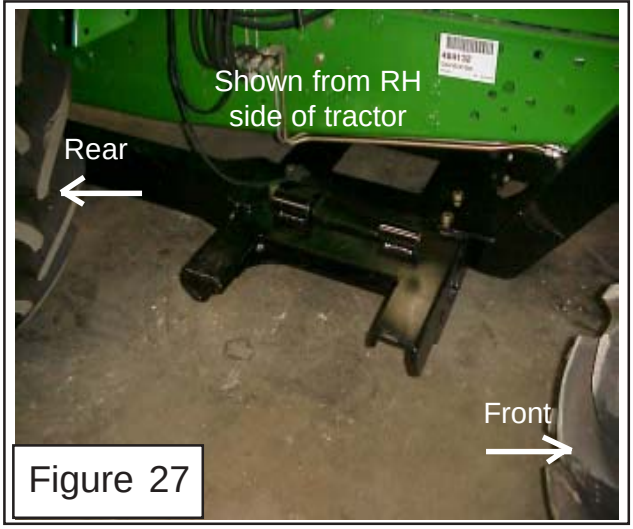

Figure 27

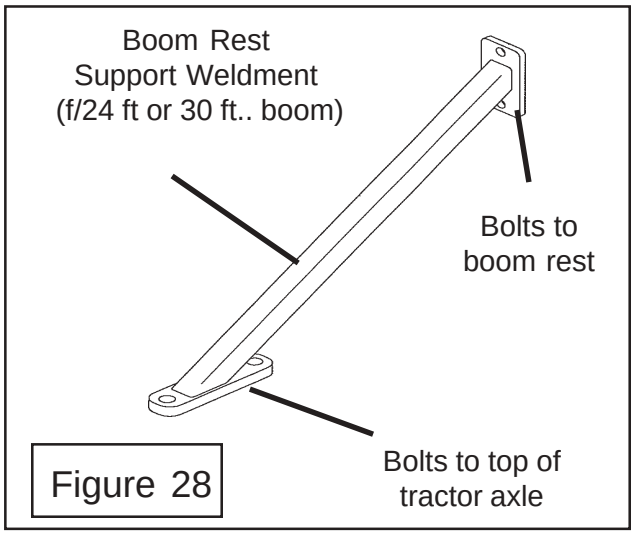

Figure 28

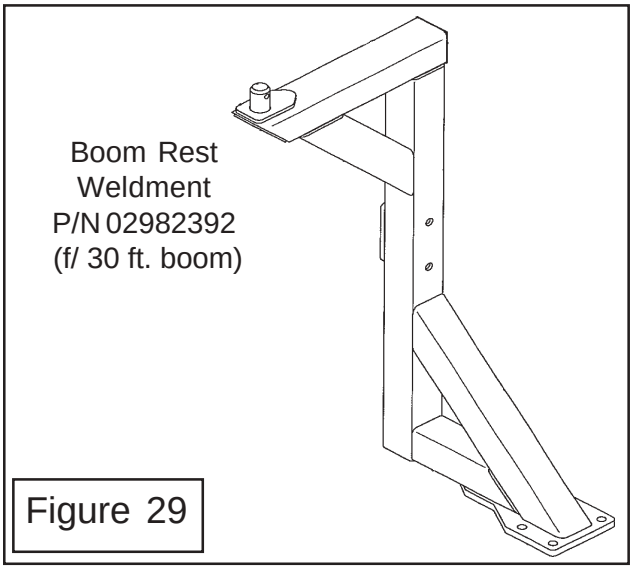

Figure 29

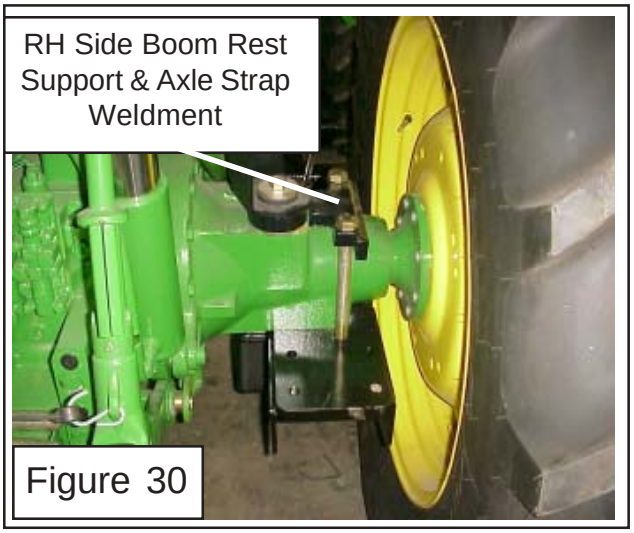

Figure 30

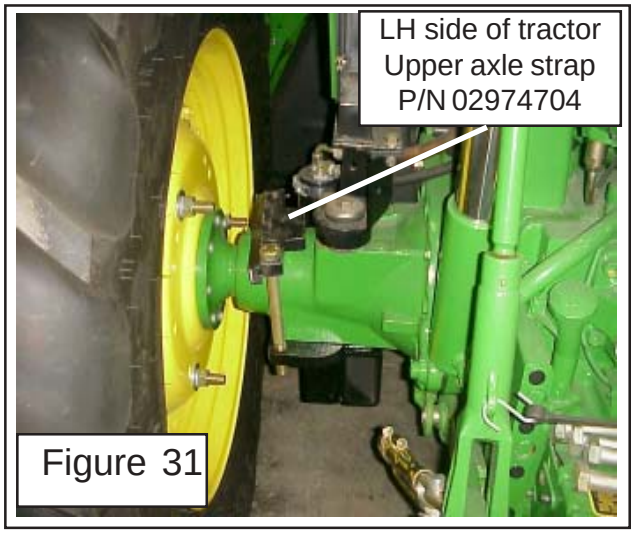

Figure 31

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Counter Weight Installation 24 & 30 Foot Boom:

1. Counter Weight (CWT) Installation. The Counter weight **(See Figure 1)** mounts on the LH side Under Frame Weldment. Its is retained with three pins, the long pin on top, the short pin at the rear and a short pin at the front. Using a hoist or other sufficient lifting device align the weight with the frame. The Frame for the weight will slide over the under frame until the upper long pin is aligned with the mounting tube of the weight and the mounting tubes of the under frame. Install the long mounting pin. The front and rear pin holes should be aligned, install the short pins front and rear. The short pins are retained using a nut and bolt. The long pin uses two large cotter pins, install cotter pins and bend end of them to secure them. (See Figure 32 , 33, 34 & 34A). Counter Weight willl mount under tractors factory fuel tank (See Figure 24A).

2. Additional Counter Weight (CWT) Installation: The 30 foot boom model has an additional bolt on weight at the counter weight. This additional weight bolts to the weight weldment on the 30 foot model only (See Figure 32)

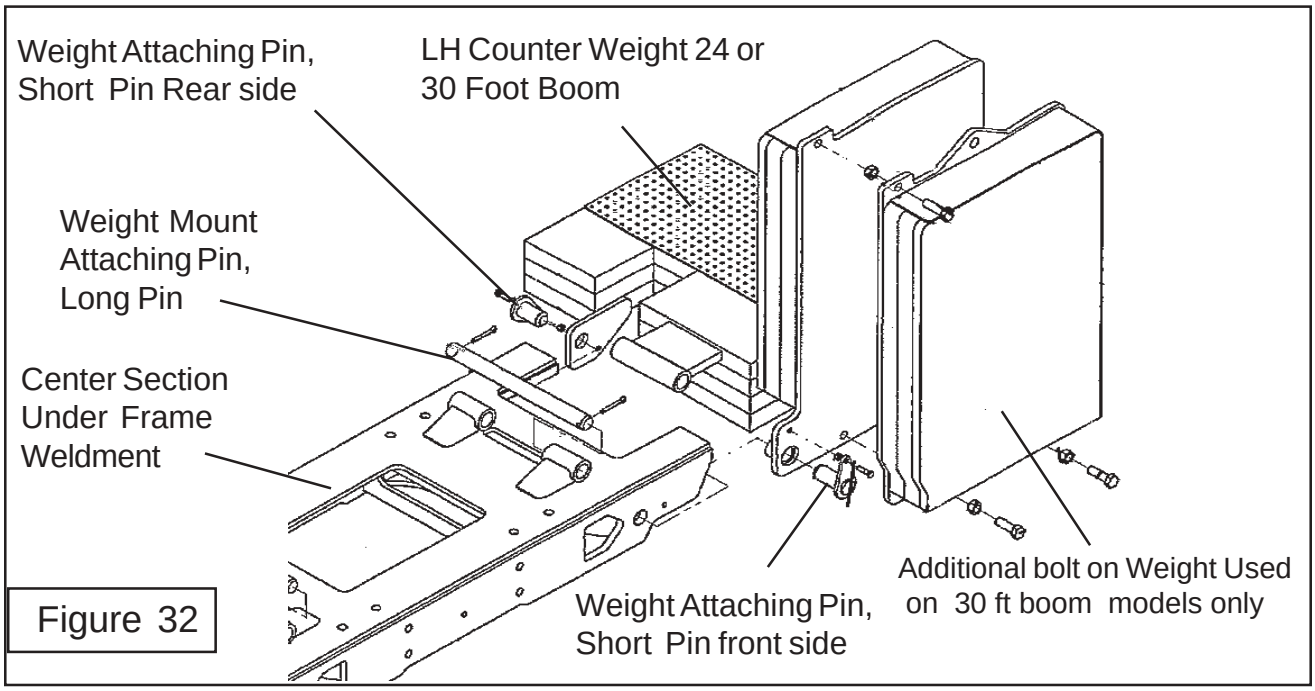

Figure 32

3. Wheel Counter Weight (CWT) Installation: The Wheel counter weight is in addition to the frame mounted counter weight, they both must be used together, the 30 foot boom will have an additional frame mounted counter weight bolted on, (See Figure 32, 33 & 34). All these weight are in addition to adding liquid weight into the Left rear tire. The proper amount of counter weight is not complete until all these weight have been installed.

Turret Assembly Installation 24 & 30 Foot Boom:

1. Turret Assembly. Theturret assembly is shipped assembled with the hydraulic swing cylinders, hoses, pivot bearing assembly, boom mount weldment and mounting pins installed (See Figure 35 & 36).

2. Under Frame Weldment. The Under frame weldment center section is designed for the turret assembly to mount on the RH side. Remove the one long mounting pin and the front and back short mounting pins (See Figure 36 & 37). Check to make certain the mounting bolts mounting the center ubder frame weldment are installed with the bolt heads unter frame weldment and nuts are on top visible looking down, if they are in wrong the swing cylinders will hit the bolts causing damge to cylinders and bolts. (See Figure 37)

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Frame Installation

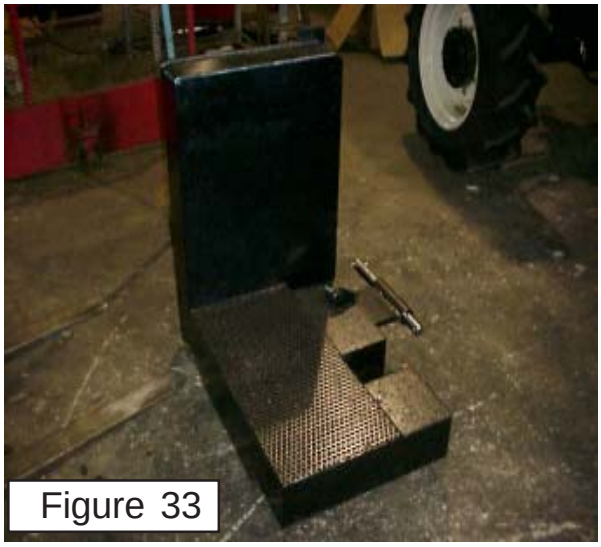

Figure 33

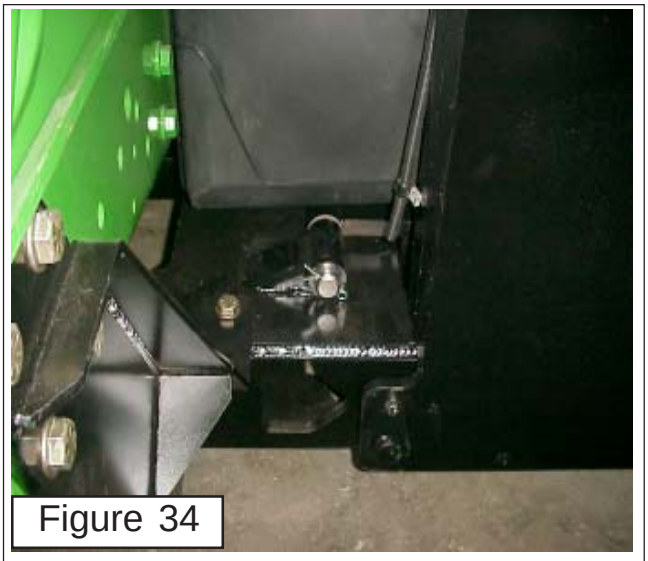

Figure 34

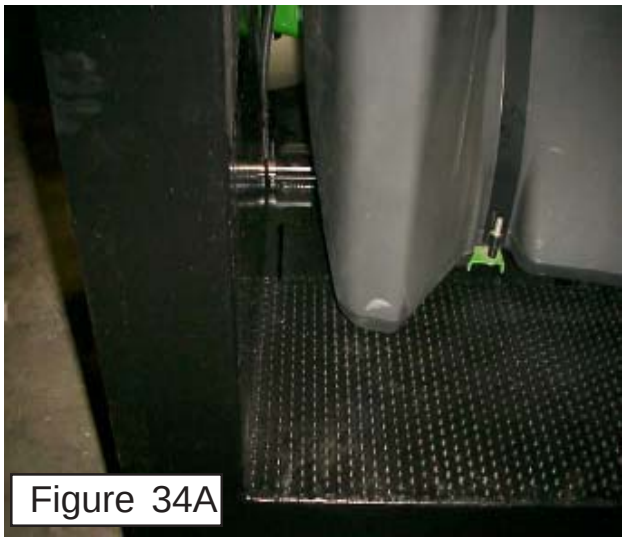

Figure 34A

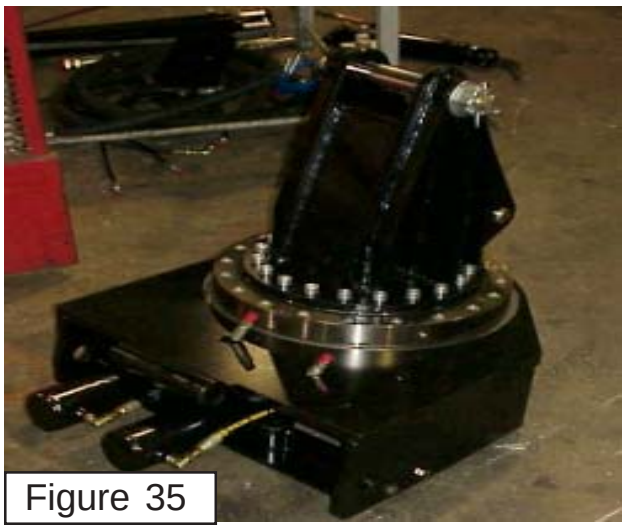

Figure 35

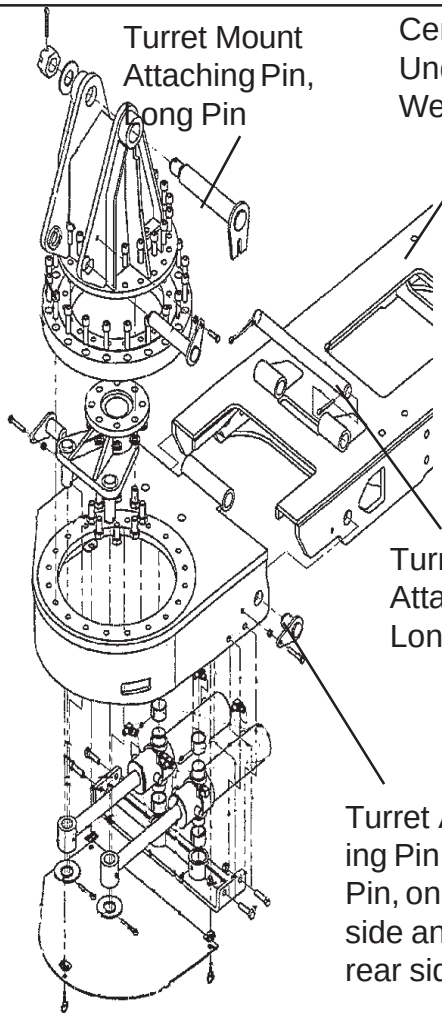
Turret Mount Attaching Pin, Long Pin
Center Section Under Frame Weldment
Turret Mount Attaching Pin, Long Pin
Turret Attaching Pin, Short Pin, one Front side and one rear side.

Figure 36

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3. Turret Assembly Installation. Theturret assembly mounts on the RH side onto the center section under frame (See Figure 36 & 37) . Using a hoist (or other lifting device) lower the turret assembly until it is level with the underframe. Slide the turret assembly inward toward the under frame until the retaining pin tube on under frame an turret assembly align. Installthe long upper retaining pin and then the two small front and rear pins. The long upper pin is retained with two cotter pins that need to be bent over on the ends. The short pins are retained with nuts and bolts (See Figure 36 & 38).

Figure 37

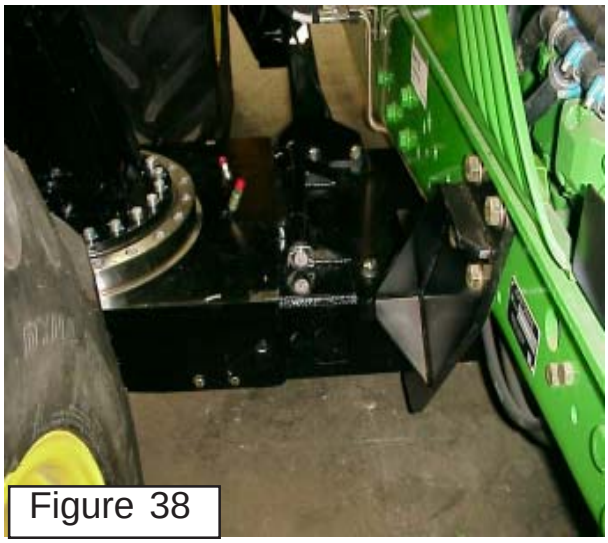

Figure 38

4. Turret Assembly Grease Fittings. The turret assembly has three grease fittings around the OD of it. The grease fittings are 120° apart, this is to make certain that the bearing will be greased all the way around because of the large diameter of the bearing. This bearing must be greased before unit is put into service. It is easier to get to grease fittings now than after boom has been installed. On the under side of the turret assembly are the grease fittings for the swing cylinder pivot mounts, these need to be greased before operating the unit. Also there is a bolt on cover on the under side of turret that will be installed (See Figure 40) at a later time. Greasing the cylinder pivots will need to be done before the cover is installed (See Figure 39) and the boom swing stop will need to be adjusted, but this cannot be done until a later time making it best to leave this cover of until then. After greasing components at assembly of unit operator should consult the operators manual for maintenance requirements.

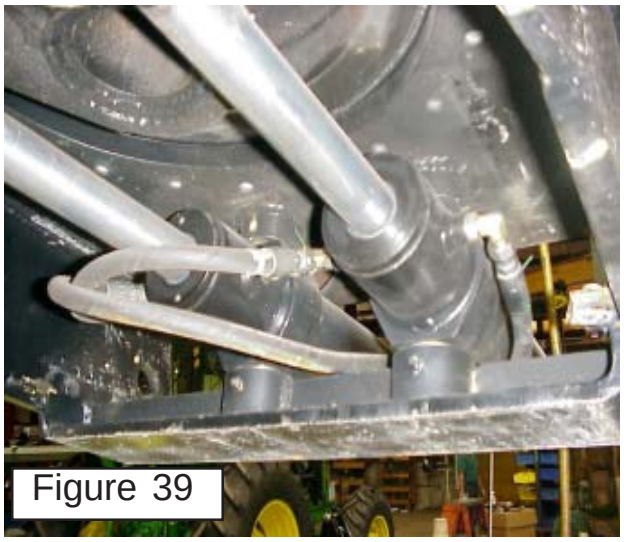

Figure 39

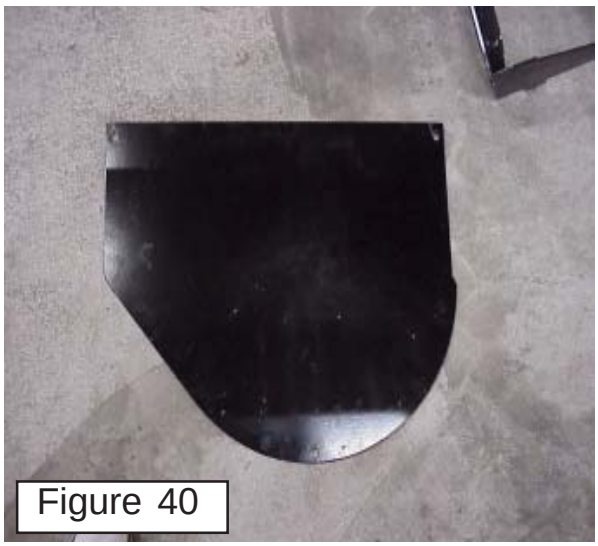

Figure 40

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Front Axle Stabilizer Kit Installation:

1. Install Front Axle Stabilizer Kit. The front axle stabilizer kit will consist of all brackets and hardware to install to front RH side of 4 wheel drive axle and RH side of tractor frame. This kit is tied to the oil supply from the Lift Cylinder for the boom, the pressure supply hose is tee'd to the "B" port of valve for the lift cylinder and connected to the rod end of the stabilizer cylinder. Install the cylinder with the rod end toward the axle and the base end of cylinder up to the bracket (See Figure 41) bolted to tractor frame. The hose connects at base end of stabilizer cylinder will connect with a tee to the tank return port for the Pump regulator, it is a Number 4 hose with a blue plastic tie at the front side of tank.

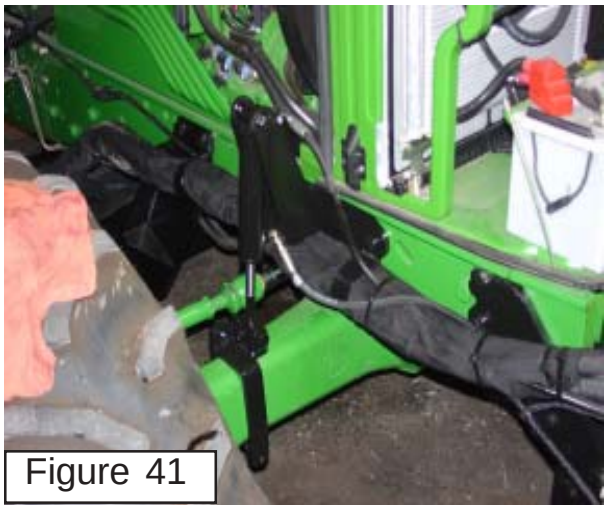
Figure 41

The Brackets bolt to the tractor axle and form a clamp around front axle housing (See Figure 42). The Stabilizer cylinder is charged only when the boom lift cylinder is activated and is controlled automatically with the boom lift controls.

Figure 42

The three axle brackets are as follows

Item	Part No	Qty	Description
1	----------	1	Rear of Axle Bracket
2	----------	1	Front of Axle Bracket
3	----------	1	Stabilizer Support Brckt

See Mount Kit & Component ID section for Axle Stabilizer component list.

2. Install Front Axle Stabilizer Cylinder Hoses. The front axle stabilizer kit will consist of two hoses. One hose will connect to the rod end of the stabilizer cylinder and connect to a Tee fitting on the "B" of the control valve where the boom lift cylinder hose connects, See the valve / cylinder hose routing in the boom / head installation section.

The Second hose connect to the base end of the stabilizer cylinder and connect to the return port on the tank with a Tee fitting at the "F" Tank return connection. See the tank hose routing in the boom / head installation section for schematic of hose connections.

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NOTES

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Section 7

MAVERICK

Standard Wheel Weight
&
Auxiliary Wheel Weight Installation

John Deere Tractor
JD-6615, 6715

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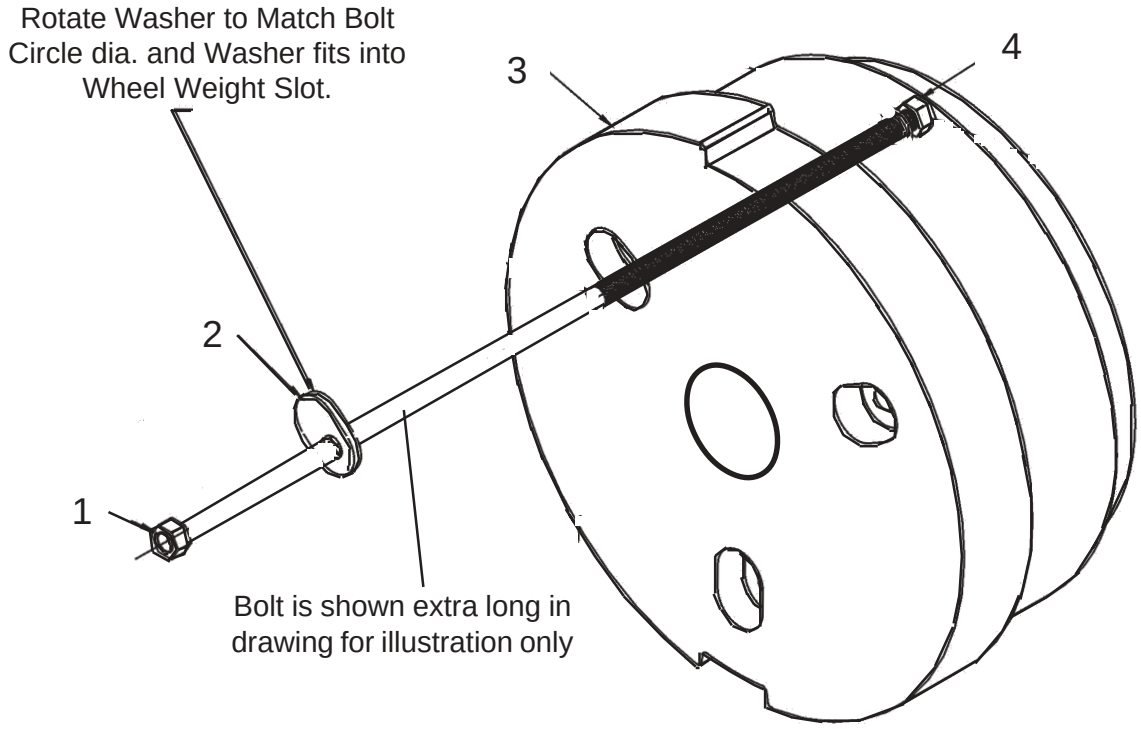
Rear Wheel Counter Weight

Fill Left Rear Wheel with Liquid:

The Left Rear Wheel must be filled with liquid. Alamo Industrial recommends a Calcium Chloride Water Mixture. The recommended Ratio of a 30 / 70 mix (30% Calcium Chloride and 70% Water), this mixture will add weight at about 10.5 lbs per gallon. Follow the Mixture procedures furnished by the Manufactured of the Brand of Calcium Chloride that you are using. It is also recommended that a trained person installs the calcium Chloride. Calcium Chloride must be added in addition to the Steel Wheel Weight and the Counter Weight that hangs on the Left Side. It is Not recommended to use straight Water in the Wheel as this would not provide protection against freezing. A 30/70 Calcium Chloride Water mixture provides antifreeze to approx -50 deg. F. below 0.


Rotate Washer to Match Bolt Circle dia. and Washer fits into Wheel Weight Slot.
3
4
2
1
Bolt is shown extra long in drawing for illustration only

Item	Part No.	Qty	Description
1	02979603	3	Hex Head Bolt, 7/8" NC X 16"
2	02971569	3	Wheel Weight Washer, Special
3	02970758	1	Wheel Weight Casting, 1400 lbs.
4	5JRC1490	3	Locknut, Top Lock 7/8" NC

Note: some Older Units used a All Thread Rod with Hex Nuts Lock Nuts, with Flat Washer and Lock washer. This was replaced with the Bolt Type shown above. These Bolt and Nut combinations will replace the old All Thread type.

Figure 1

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Rear Wheel Counter Weight

Installing Wheel Weight

1. This Wheel Weight is 1400 lbs. Always use caution when working with it.

2. Locate the three Holes in LH Rear Wheel. Make sure these holes are 15/16" dia. if not, they must be reamed out.

3. Lift Left Rear Tractor Wheel till it just clears the ground. This will allow the Wheel to be rotated when aligning mounting holes for Weight.

4. Using a forklift, lift Wheel Weight into Wheel. When Wheel Weight is centered in Wheel Secure Forklift and Set Parking Brake on Forklift. Insert one of the three bolts through Weight and Wheel (Rotate Wheel to align holes if needed). Install a Hex Lock Nut on inside. Insert the other two Bolts through Weight and Wheel and start the other two Locknuts. Do not tighten yet. **(See Figure 2)**

Figure 2

5. Looking at the outside make sure the three special Washers **(Figure 1 Item 2)** are aligned with the Slots in the Wheel Weight. Tighten the three Bolts now. You will need an assistant to hold the other Side while you are tightening the Bolts. While tightening Bolts, check to make sure the three special washers are seated correctly. If these Bolts are tightened and washer are not seated into the recess on Wheel Weight, damage will occur. **(See Figure 3)**

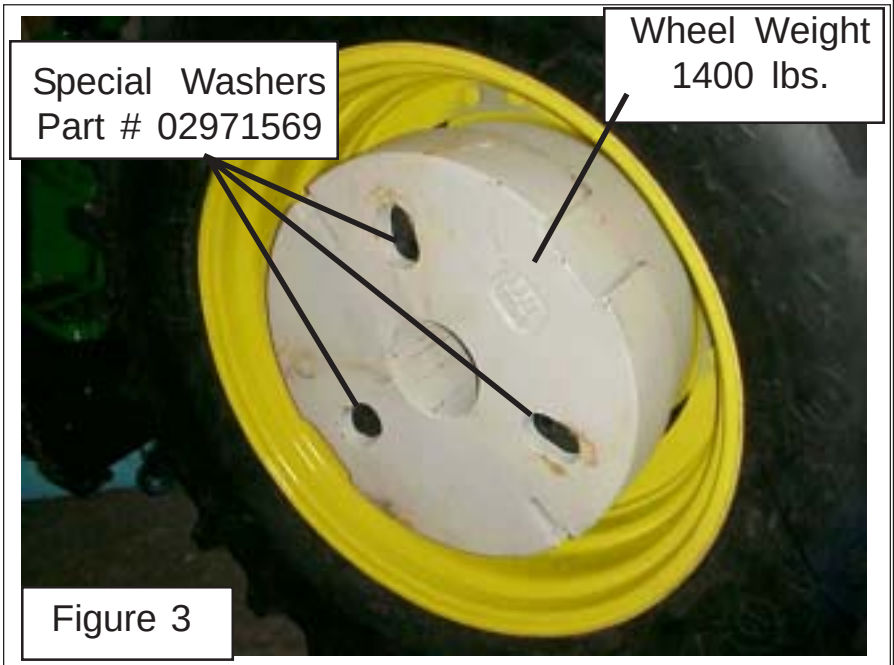

Figure 3

6. Remove forklift away from Wheel and Weight. Recheck tightness of Wheel Weight retaining Bolts. Bolts should torque to 500 ft. lbs.

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Auxiliary Rear Wheel Counter Weight

Installing Auxiliary Wheel Weight Kit.

1. The Auxiliary Wheel Weight is made up of three steel plates and mounting hardware. Each Auxiliary Weight weighs approx 136 lbs. When all three are installed on the existing 1400 lb. weight it will increase the wheel weight by 408 lbs. This makes the total bolt on wheel weights equal 1800 lbs. This will not include the amount of weight to the tire from the installed liquid which, will vary with the size of the tire and the liquid that is added.

Auxiliary. Wheel Weight Kit No. 02976671

Qty	Part No.	Description
2	00012200	Lockwasher, 7/8"
2	00012300	Nut, 7/8" NC
2	00760266	Bolt, 7/8"-NC X 5-1/2 GR8
3	02976644	Auxiliary Wheel Weight Plate, 136 lbs Each

2. Install Auxiliary Wheel Weights. The Auxiliary Wheel Weight bolt to the larger 1400 lb. wheel weight. There are two slots in the large weight that the 7/8" bolt heads will slide into. It is recommended that the tractor wheel is in position so these two slots has one facing front and one to the rear. Slide the two 7/8" bolts into the slots, the slots will prevent the heads of the bolts from turning. The Bolts in the large wheel weight will have to be aligned to the proper distance apart, to match the distance of the holes in the auxiliary weights. Slide the auxiliary weight over the two bolts, do this with all three weight for this kit. Install the lockwashers and hex nuts. Tighten the bolts to required tightness. See bolt torque charts in tractor preparation section.

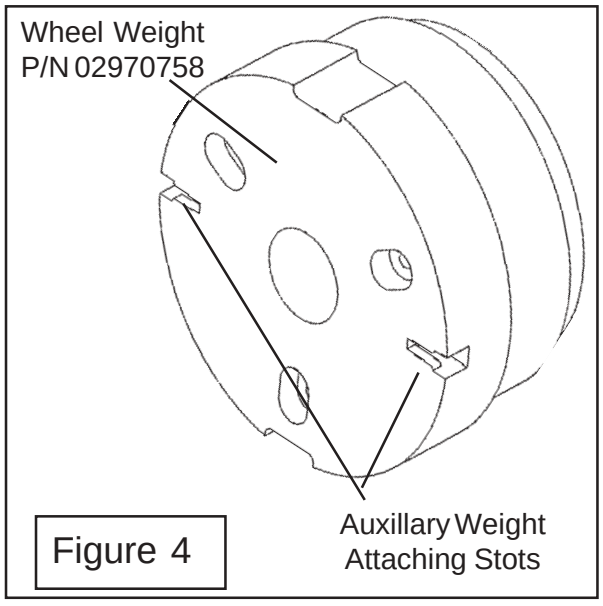

Figure 4

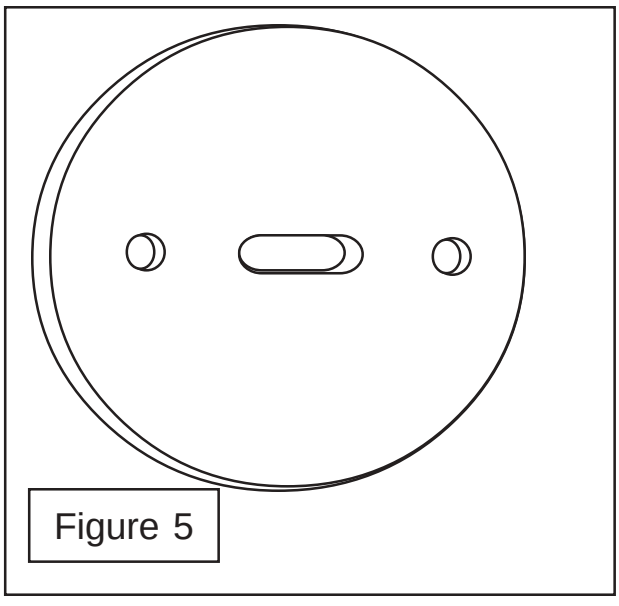
Figure 5

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Section 8

MACHETE

Joystick - Wire Harness & Valve Installation

John Deere Tractor JD-6615, 6715

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Joystick / Electrical Mounting

Installing Wiring Harness and Joystick:

1. **Preparing Tractor Floor Mat.** First thing to do is remove the Battery Cables from Battery, Do Not perform any work on Tractor or Boom Electronics unless this has been done. Raise the Floor Mat up on the RH Side by the RH Door, You will need to fold it back approx. 12 to 14 inches (See Figure 1 & 2). DO NOT Tear or Cut any Holes in Rubber Floor Mat, as it will NOT be required.
You may find a rubber plug or you may have to cut a hole with a hole saw, this will have to be decided during installation. If you need to cut a hole, check the under side of cab for any obstruction or any component that might be damaged before you cut the hole. The hole is going to have to be oblong in order for the plug to go through it. Measure Wire Harness plug Coded G1 to determine the size hole. In Figure 2 below the tractor had two holes from the tractor manufacturer, Check to make certain the installation will not interfere with the operators normal functions. (See Figure 1 & 2). Floor mat can be reinstalled over wire harness with out cutting any holes in floor mat.

FIGURE 1

FIGURE 2

2. **Remove Tractor RH Side Panel.** Remove the side panel on the RH side of the cab so the wire harness can be run down through and under top panel and will be covered when the panel is put back on (See Figure 3). Isert the end of the interior wire harness with the pug coded G1 down into the panel from top and out bottom of panel (See Figure 3 & 4).

FIGURE 3

FIGURE 4

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Joystick / Electrical Mounting

Locating Joystick and electrical components:

1. **Joystick Assembly with Resister Harness**. The joystick has the resister wire harness attached to it when you received the joystick.

2. Emergency Stop Switch. The emergency Stop (E-Stop) Switch will be sent with the knob and mounting nuts installed onto it. These will need to be removed when mounting switch.

3. Replacement Seat Arm Rest. The Tractor seats Rh arm rest will be replaced with a fabricated one to mount E-Stop Switch and Joystick.

4. Wire Harness. The Wire harness is in two piece, The interior harness inside the cab and the exterior harness connecting to the interior harness and running outside the cab to the pump and tank area at the front of the tractor.

5. Wire Harness through Floor of Tractor Cab. Some tractors may have a hole all ready through the floor of the cab on the RH side. Lift Floor mat and check, if no hole (possible with rubber plug in it) a hole will need to be cut with a hole saw. If cutting holes in floor of cab always check under side of floor to make certain there are no components that will be hit and damaged by saw. DO NOT use a torch to cut holes in cab floor.

6. Access Panels of Tractor interior. Panels in the cab will need to be loosened and/or removed to gain access to connections and/or mounting of components. Do not remove any panels until instructed to do so.

Installing Seat Replacement Arm Rest:

1. **Replace RH Factory Arm Rest**. The factory seat RH arm rest will be replaced with a weldment designed to serve as the armrest and mount for the emergency stop switch and the joystick assembly (See Figure 5, 6 & 7). Unbolt the factory arm rest and bolt on the replacement arm rest. The Arem rest is retained using the same type method as thr factory arm rest, this is what allows the arm rest to be raised up and down (See Figure 6) See the bottom of the welded replacement arm rest. It may be required to use a die grinder in slotted hole th help with alignment of retaining bolt. (See Figure 6).

2. Install Emergency Stop Switch. The emergency Stop (E-Stop) Switch mounts into the arm rest in the smaller of the two holes. The Knob and mounting nut will need to be removed and the switch installed from the bottom of the arm rest. Replace mounting nut and knob (See Figure 5 , 7 & 8)

3. Locate Joystick Assembly. The joystick assembly has a flange around the bottom, it uses 4 screws to mount joystick to the arm rest. Lower the wiring of joystick down through hole in arm rest. Make certain the three plugs are in the hole and not being pinched. (See Figure 9 & 12).

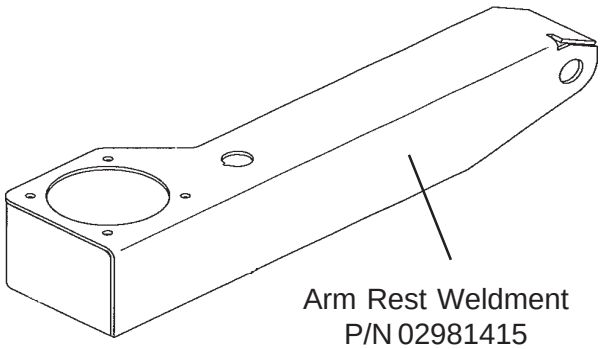

FIGURE 5

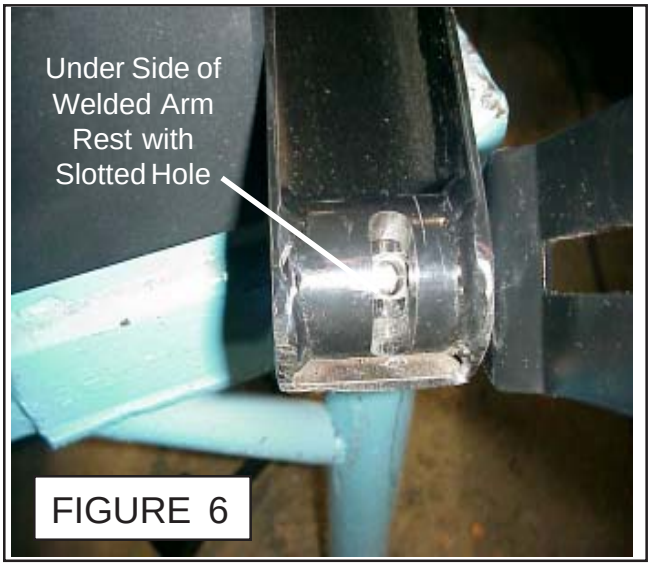

FIGURE 6

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Joystick / Electrical Mounting

Resistor Harness P/N 02981990 Is attached to the Joystick when it is recieved.

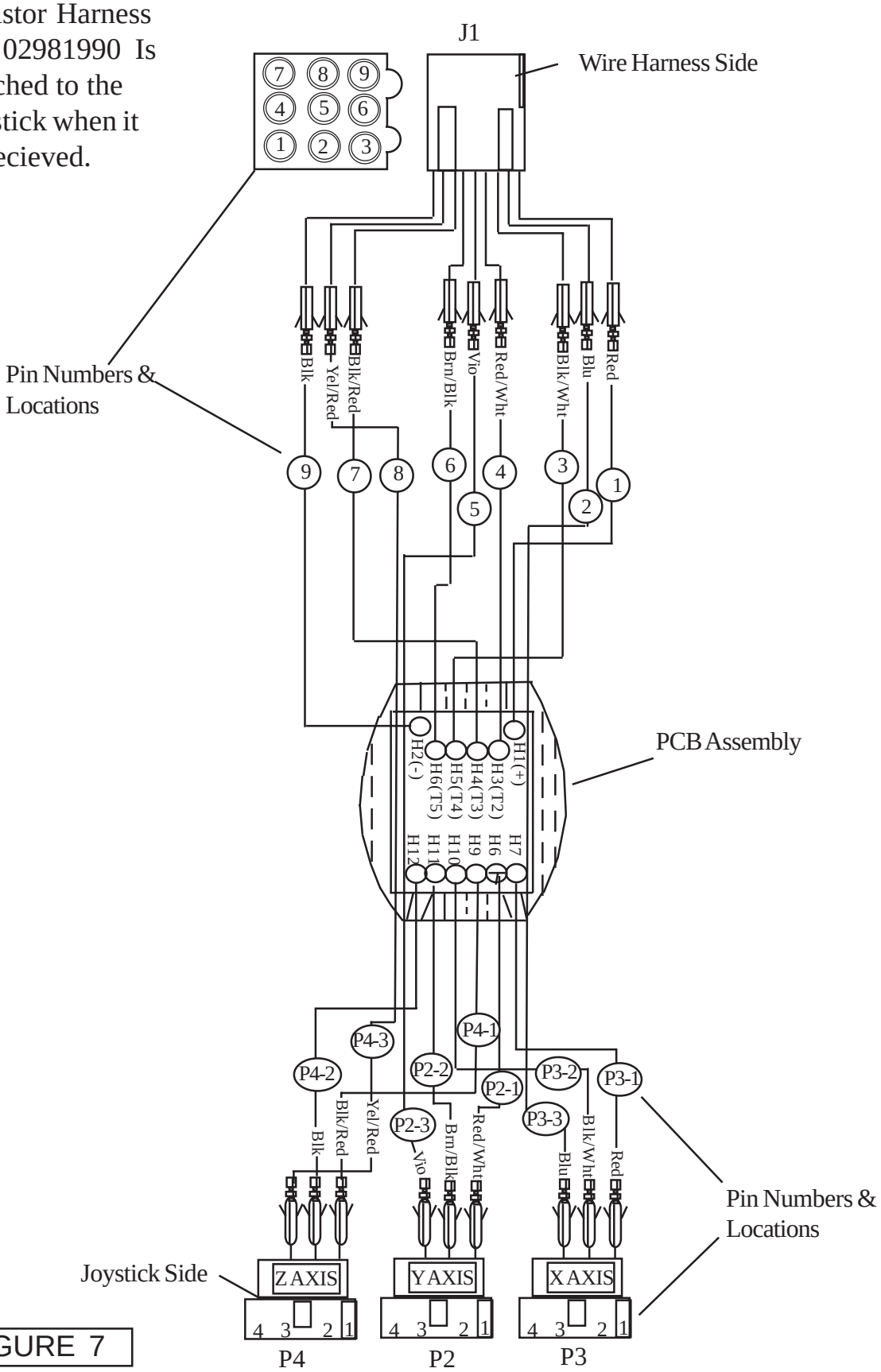

FIGURE 7

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4. **Resister Harness to Joystick**. The Joystick will be shipped with the resister Harness connected to it as an assembly. (See Figure 7 & 8) The Interior wire harness plug has 2 connectors on it A 9 Pin Connector (labeled J1) and a 6 Pin Connector (labeled P1) . These two connections will plug into the interior wire harness with the same code when the interior harness is installed. (See Figure 7 & 8). The Interior harness is run under the RH side Panel and along the rear panel. You will need to cut a notch in the rear panel to allow the harness to pass between the two panels where they meet near the bottom.

FIGURE 7A

5. **Interior Wire Harness**. The interior wire harness has all the connections needed to connect interior components. The RH side interior panel of cab will need to be loosened and/ or removed, this allows mounting of the XS module (See Figure 6 & Next pages for wiring schematics) continued in step 6

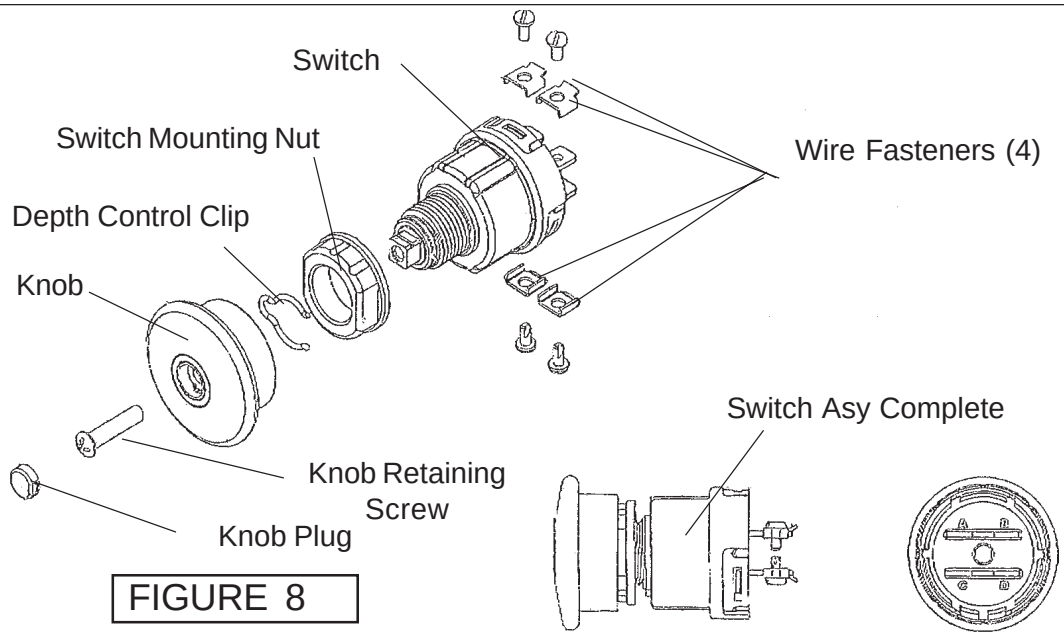

FIGURE 8

FIGURE 9

FIGURE 10

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6. **Interior Wire Harness (continued)**. The interior wire harness schematic (See Figure 11 & 12) shows the wire harness as it is run through the cab. The XS Module will need to be mounted inside the cab, the best place is behind the RH side panel (See Figure 6, 9 & 12). The wire harness will need it be put under this panel, also with the connectors in the appropriate place to connect with the interior components. The harness to the joys stick will need to be run along the panel at the back of the cab. **CAUTION: The Harness has two wires that run under the floor mat, the positive wire MUST connect to the ignition key switch of the tractor for a power source. DO NOT Connect the positive wire anywhere else (See Step 9 & Figure 14 wire CC1).**. The plug (G1) will need to run through the floor to the exterior of the cab, it will connect to the plug (G2) of the exterior harness. (See figure 11, 12, 13 & 14). Secure wires under arm rest.

FIGURE 11

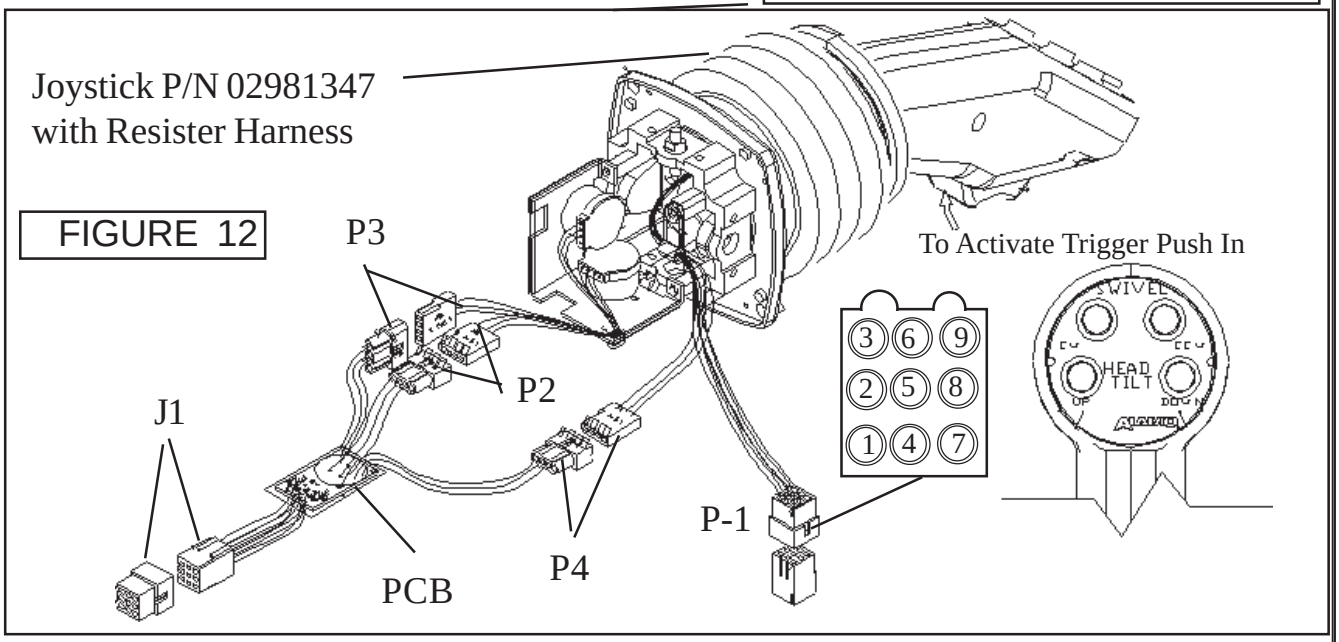

FIGURE 12

7. **XS Module P/N 02981533**. The XS module (See Figure 13) mounts in side the tractor cab behind the right hand side panel (See Figure 13 & 14). The Connections (Three Separate Pugs, Can 1, Can 2 & D) will be inside the side panel after it is reinstalled and will not be visible unless you remove the side panel (See Figure 14 , 16, 17 & 18). The XS Module does not have a mount bracket, it will need to be mounted by the assembly technician inside panel where it will be out of the way, not interfere with any tractor components and be secured. It can be tied in or bolted. The Only Plugs protruding from behind RH Interior panel shoud be the plugs for the display control box (See Figure 14, 16, 17 & 18).

FIGURE 13

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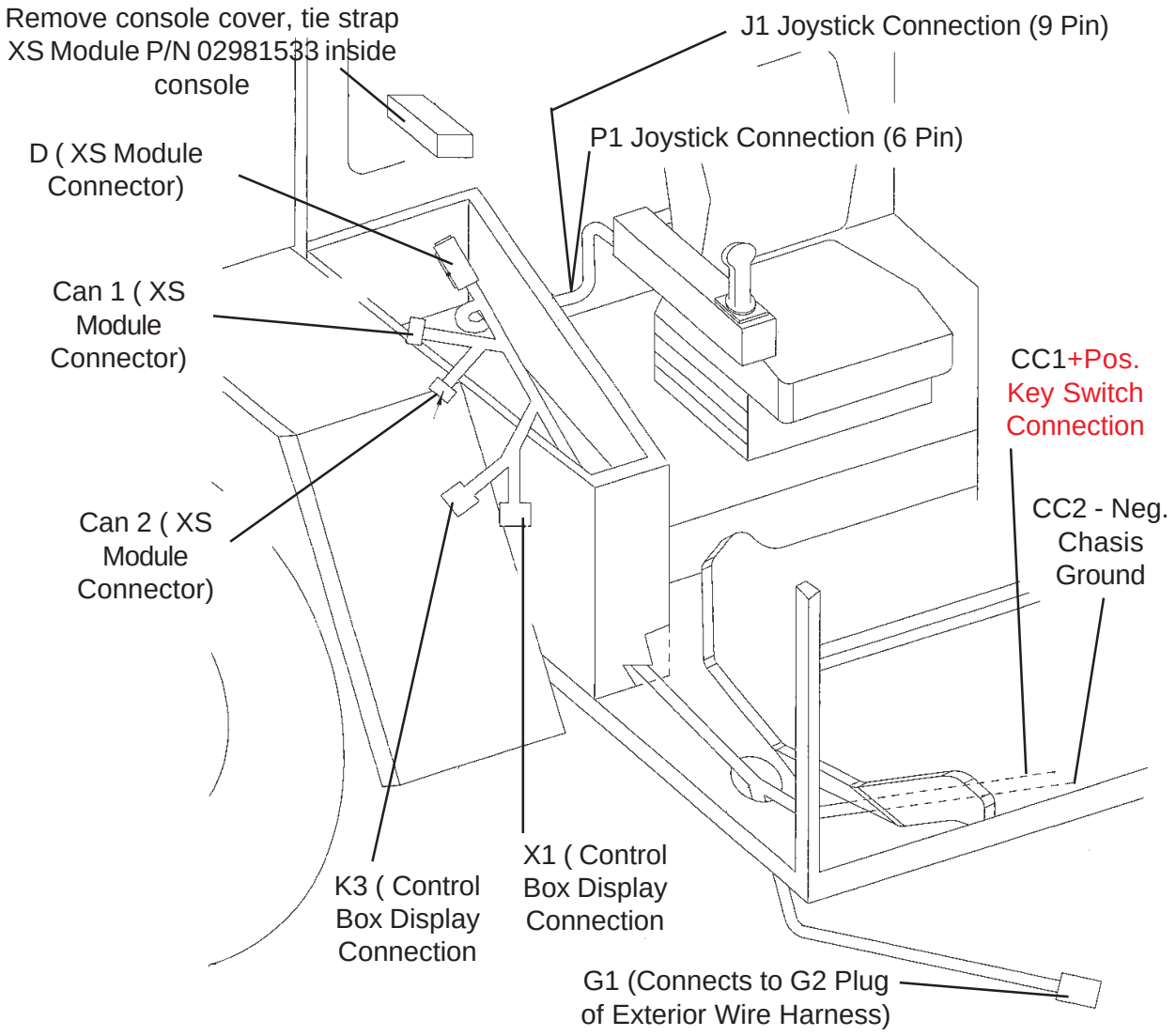
Interior Wire Harness Schematic P/N 02981375B


Remove console cover, tie strap XS Module P/N 02981533 inside console
J1 Joystick Connection (9 Pin)
P1 Joystick Connection (6 Pin)
D (XS Module Connector)
Can 1 (XS Module Connector)
CC1+Pos. Key Switch Connection
CC2 - Neg. Chasis Ground
Can 2 (XS Module Connector)
K3 (Control Box Display Connection
X1 (Control Box Display Connection
G1 (Connects to G2 Plug of Exterior Wire Harness)

Code	Connection
Can 1	XS Module Can1 Connection (2 of 3 Connections)
Can 2	XS Module Can 2 Connection (3 of 3 Connections)
CC1	+ Positive Key Switch Connection **(MUST Connect to key switch wire)**
CC2	- Negative Chasis Ground
D	XS Moudule C1 Connection (1 of 3 Connections)
G1	Exterior Harness G2 Plug (coonnects Interior & exterior Harness)
J1	Joystick Resister Harness (9 Pin Plug)
K3	Control Box Display Connection (1 of 2 Connections)
M1	E-Stop Switch (use A or B of Switch)
M2	E-Stop Switch (use A or B of Switch)
X1	Control Box Display Connection (2 of 2 Connections

FIGURE 14

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8. **Wire Exterior & Interior Harness Schematic**. The wire harness schematics and instructions will need to be used together to install the wire harness. The interior Harness and the exterior harness will connect together with one plug connection. Figure 14, 16,17, 18 & 19) pertain to the interior harness, Plugs have codes on them to identify where they connect, the connections will have codes on them to identify where the connection goes. The code on the plug and the code on the connection may not be the same, see the code connection listings in the illustrations to identify the connection location.

9. Plugs for Display Control Box. The wire plugs for the display control box will come up through the small cover on top of the right hand side panel (See Figure 16, 17, 18 & 19). When the small cover is replaced the plugs and wires need to be moved to the back of the panel near the RH rear cab post (See Figure 17 & 18). Cut a notch in the panel at the rear so the cover will fit down around the wire harness plugs (See Figure 17 & 18). Also the rear tractor panel will need a notch cut in it to allow the wire harness to be installed between the side and rear panel. Cut this notch near the bottom of the rear panel (See Figure 19)

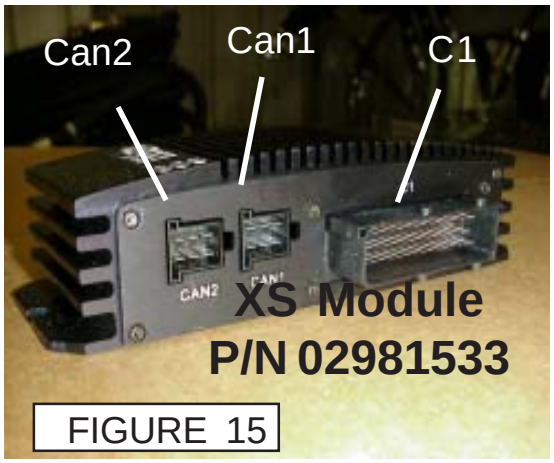

FIGURE 15

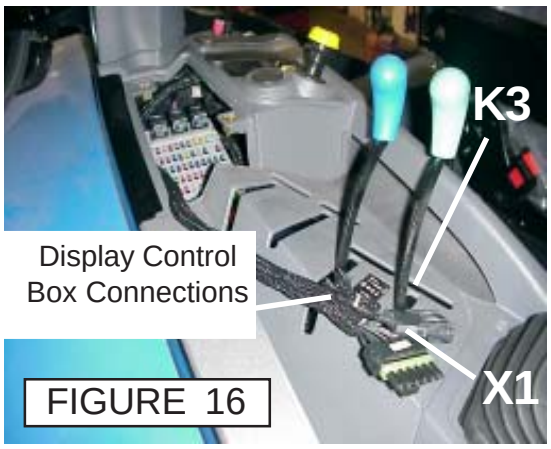

FIGURE 16

FIGURE 17

FIGURE 18

FIGURE 19

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Interior Wire Harness Schematic P/N 02981375B

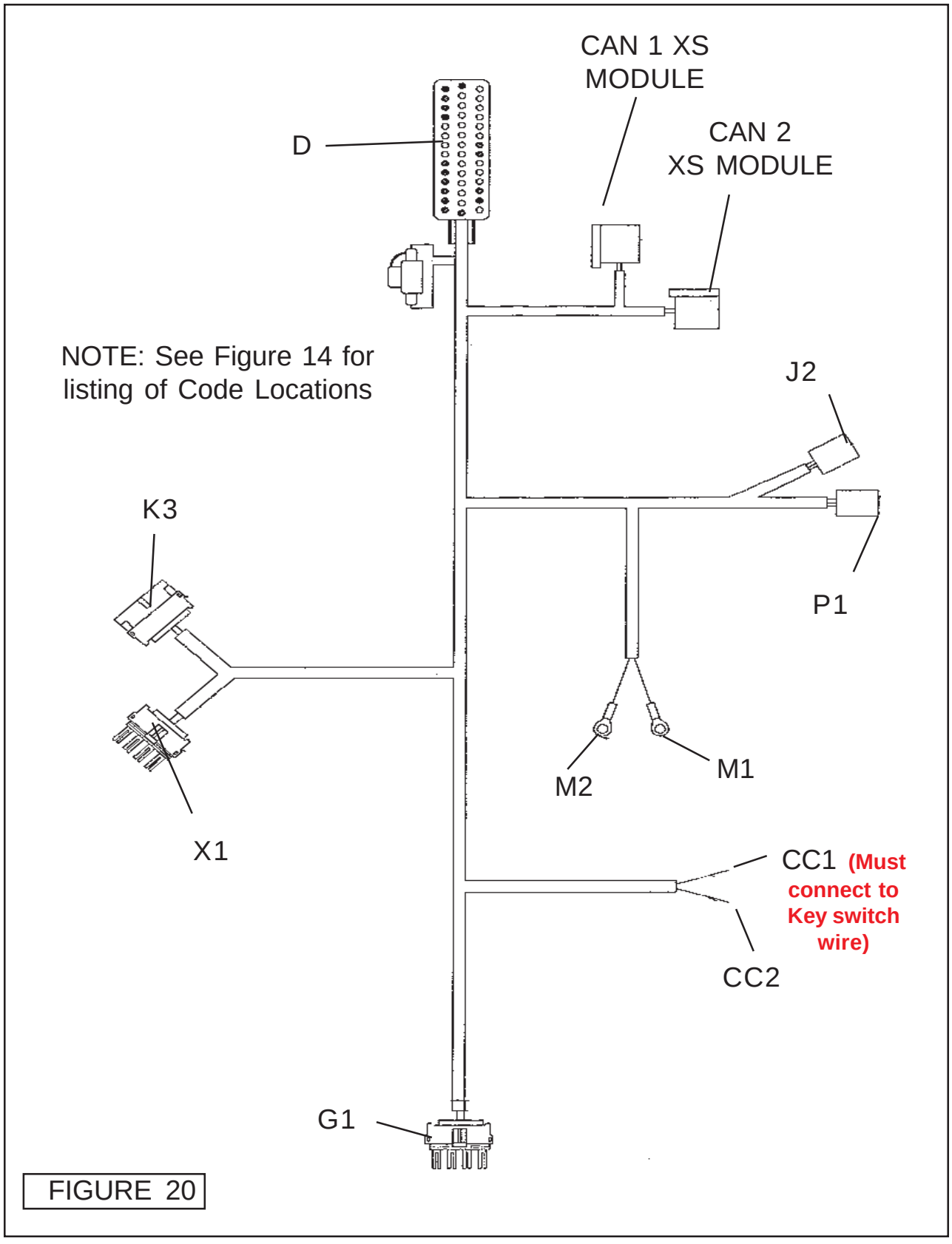

FIGURE 20

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Interior XS Module & Display Control Box

9. Connect Wires to Key Switch. There are two wires on the interior Harness that connects to the key switch (Wires CC1 and CC2) these need to be routed under floor mat and in behind dash panels. **CAUTION:The positeve wire (CCI) MUST be connected to the wire from the key ignition switch of tractor for an electrical power supply. DO NOT connect the power supply wire (CC1) to any other power supply as it could cause interference with the electronic components due to a power surge**

10. Tractor RH Side Panel reinstalled. When the tractor side panel is reinstalled the plugs (2 Plugs K3 & X1) for the Display control box will be sticking up out from be hind the panel (See Figure 21), Run the wiring harness in from behind panel, use caution to not let wire harness interfere with or be in a position to damage or be damaged by other tractor components behind panel.

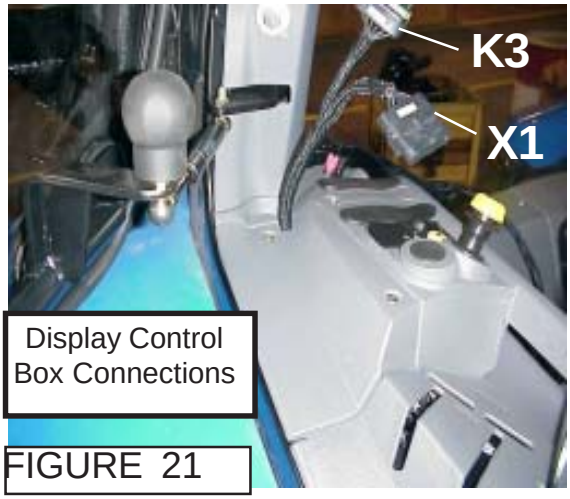


FIGURE 21

11. Install Display Control Box Mount Bracket. The display mount control box mount to the Rh rear cab post (See Figure 22 & 23) . There are two plastic plugs in the plastic cover over cab post. Remove these two plug to expose two 10 mm bolt holes in cab post. Position the mounting bracket with the bent end at the post and using the 10 mm bolts furnished bolt the bracket to the post.

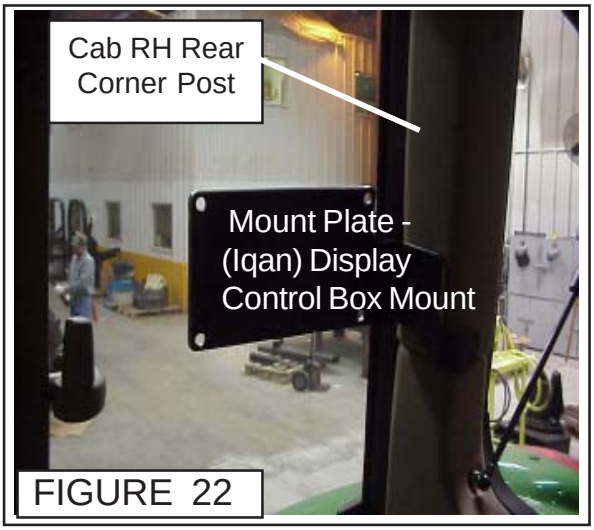
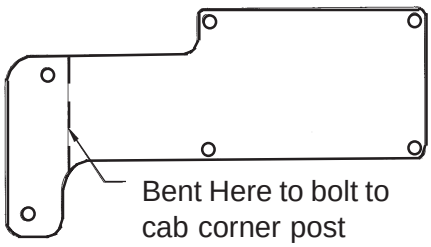


FIGURE 22

12. Install Display Control Box. The display control box will bolt to the mount plate that is mounted to the RH Rear Cab corner post (See Figure 22, 23 & 24). There is a wire setion on disply control box that will pug into the two plugs on the interior harness plug KS & X1 (See Figure 21 & 22)
The display control box cannot be tested until the interior and exterior wiring harness installation has been completed and all the other installations of unit have been done. DO NOT reconnect battery cables at this time, the electrical wiring is NOT done.



Mount Plate - (Iqan) Display Control Box Mount

FIGURE 23

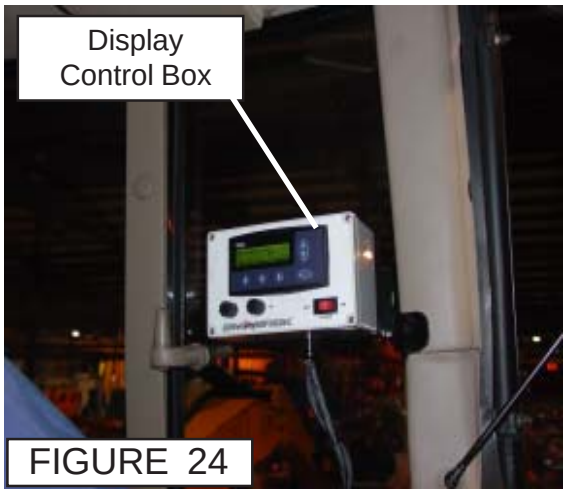


FIGURE 24

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Exterior Wire Harness Schematic P/N 02981375A

13. **Exterior Wire Harness**. The exterior wire harness will run from the cab of the tractor to the front. It will include the wiring for the sensors at the pump. The connections for the valve actuator assemblies. The electronic modules that are mounted to the right side of the tank and the module on the front of the valve. The plugs have codes labeled on them, there is a matching code on them where the plugs are connected. Some plugs have instructions and/or color codes. Read the next pages of this manual to become familiar with the wire harness connections. There are two electronic modules bolt on the tank assembly in the front of the tractor. The XT2 module bolted on the right hand side of the tank and the XP2 bolt on the LH side in front of the 6 spool valve. (See Figure 25, 27 & 28). The exterior wiring harness should be laid out and connections need to be start at the first connection coming from the tractor cab connection, this allows the harness to be moved around and under components as needed.
NOTE; V1 Pump Solenoid 2 is only used when the Timbercat Head is installed and will be installed into plug next to Pump solenoid 1 which is used with all heads. Note: Unless the timbercat head is used only Solenid 1 will be installed which is Plug V1, leave plug T1 tie to othrer plug out of the way.

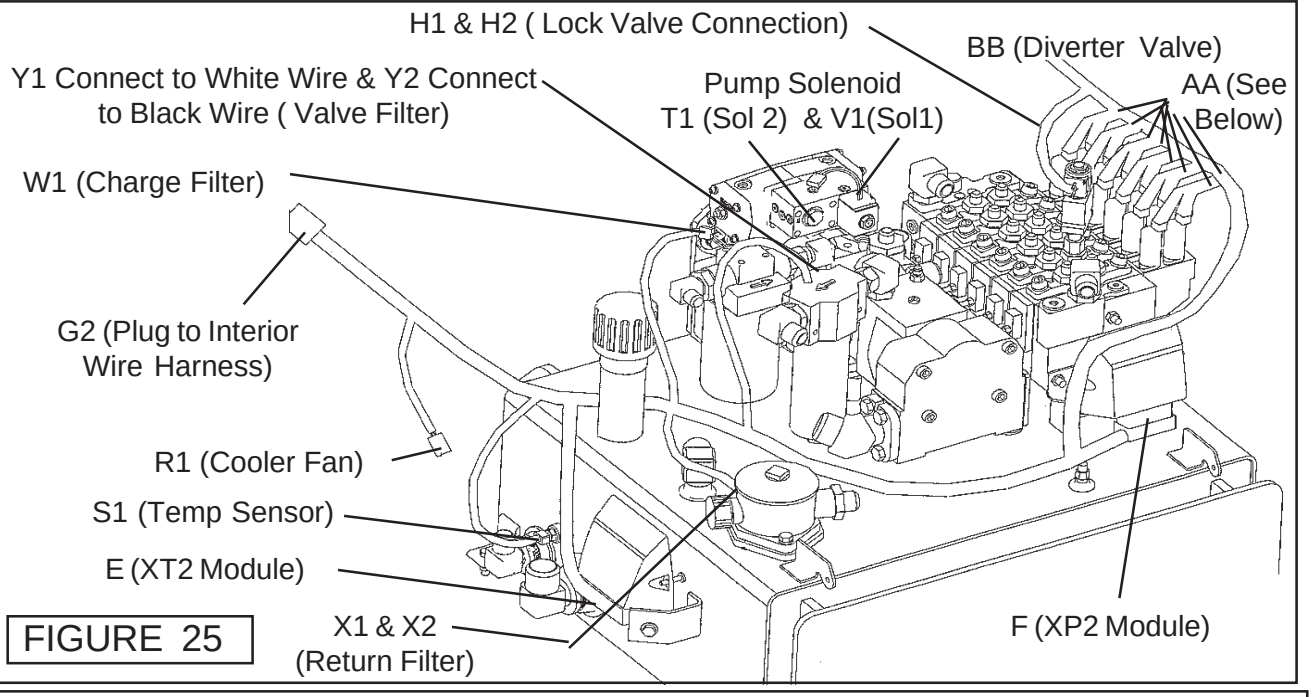
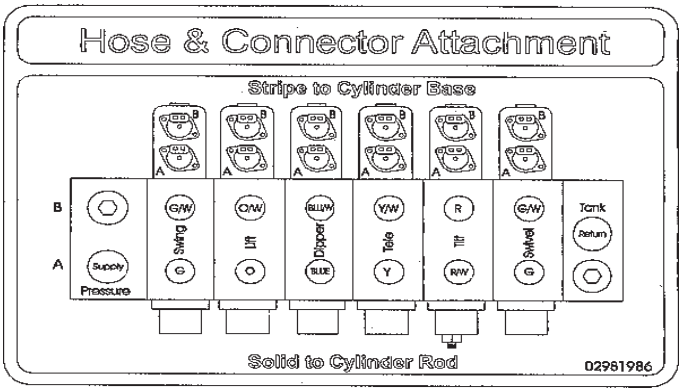

H1 & H2 (Lock Valve Connection)
BB (Diverter Valve)
Y1 Connect to White Wire & Y2 Connect to Black Wire (Valve Filter)
Pump Solenoid T1 (Sol 2) & V1(Sol1)
AA (See Below)
W1 (Charge Filter)
G2 (Plug to Interior Wire Harness)
R1 (Cooler Fan)
S1 (Temp Sensor)
E (XT2 Module)
X1 & X2 (Return Filter)
F (XP2 Module)

FIGURE 25

Plug Label	Valve Function	Valve Label
AA1	Swivel	B
AA2	Swivel	A
AA3	Tilt	A
AA4	Tilt	B
AA5	Telescope	A
AA6	Telescope	B
AA7	Dipper	A
AA8	Dipper	B
AA9	Lift	A
AA10	Lift	B
AA11	Swing / Door	A
AA12	Swing / Door	B

FIGURE 26

Decal Below shows the Hose location and Plastic tie color on hose. Also the markings for the wire harness plugs on valve ("A" or "B") See Figure 18 & 18A)



NOTE; Decal, Stripes to Base and Solid to Rod end refers to the plastic ties on hoses only & not electricl connections

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Exterior Wire Harness Schematic P/N 02981375A

AA1	Swivel Cylinder, CCW
AA2	Swivel Cylinder, CW
AA3	Tilt Cylinder, Down
AA4	Tilt Cylinder, Up
AA5	Telescope Cyl, IN
AA6	Telescope Cylinder, Out
AA7	Dipper Cylinder, Down
AA8	Dipper Cylinder, Up
AA9	Lift Cylinder, Down
AA10	Lift Cylinder, Up
AA11	Swing / Door
AA12	Swing / Door
BB	Solenoid Valve Connection for Diverter Valve
E	Connector XT2 Module
F	Connector XP2 Module
G2	Exterior Harness to G1 Interior Harness
H1	Lock Valve Connection
H2	Lock Valve Connection
R1	Cooler Fan Connection
S1	Temperature Connection Sensor
T1	Pump Solenoid 1 Connection
V1	Pump Solenoid 2 (Only on Timbercat Head)
W1	Charge Filter connection
X1	Return Filter Connection
Y1	Common, Connect to White Wire at Filter
Y2	Signal, Connect to Black Wire at Filter
Z1	Negative Chasis Ground

Connection Markings on Exterior Wire Harness:

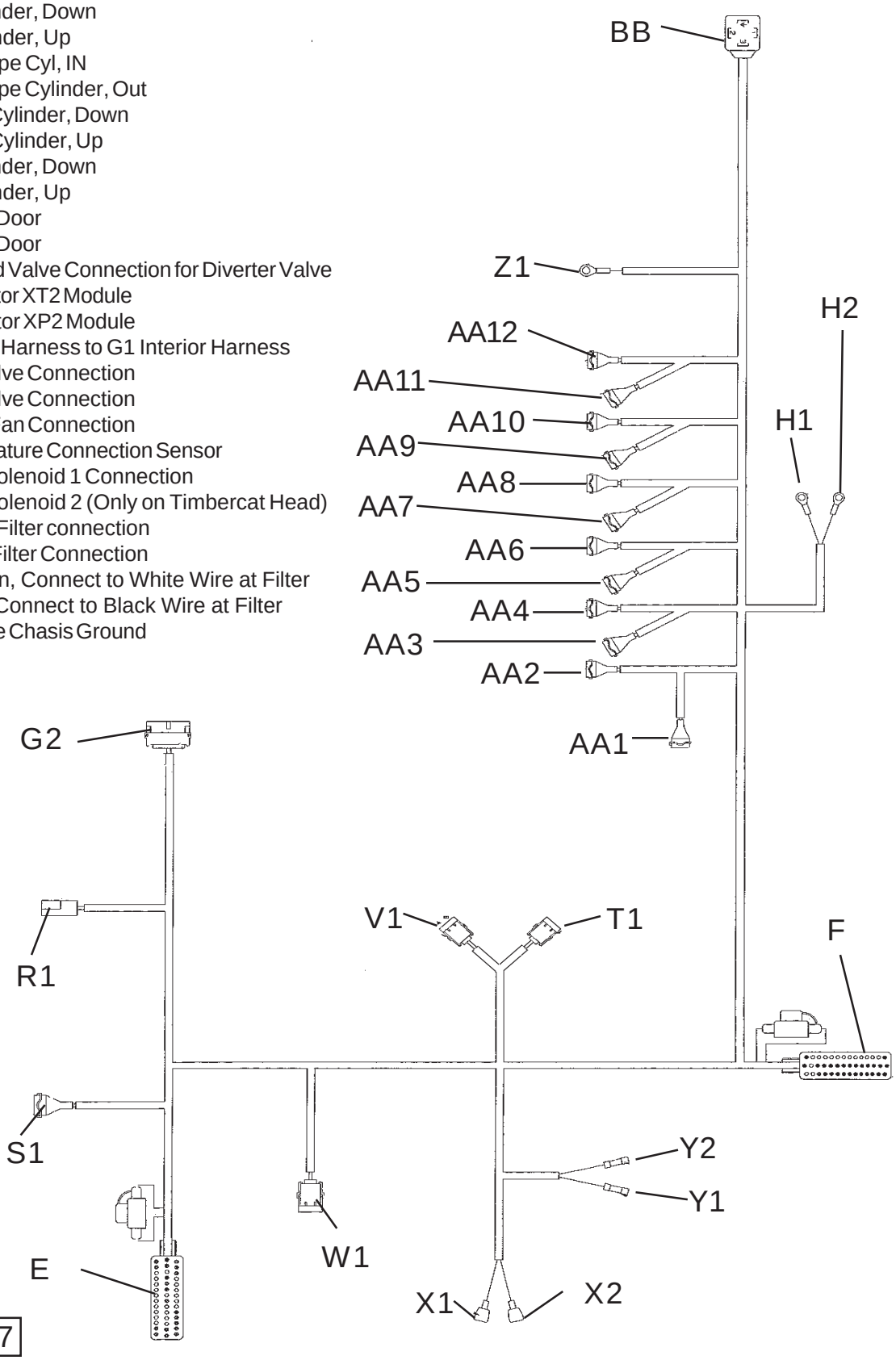

FIGURE 27

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Exterior Wire Harness Schematic P/N 02981375A

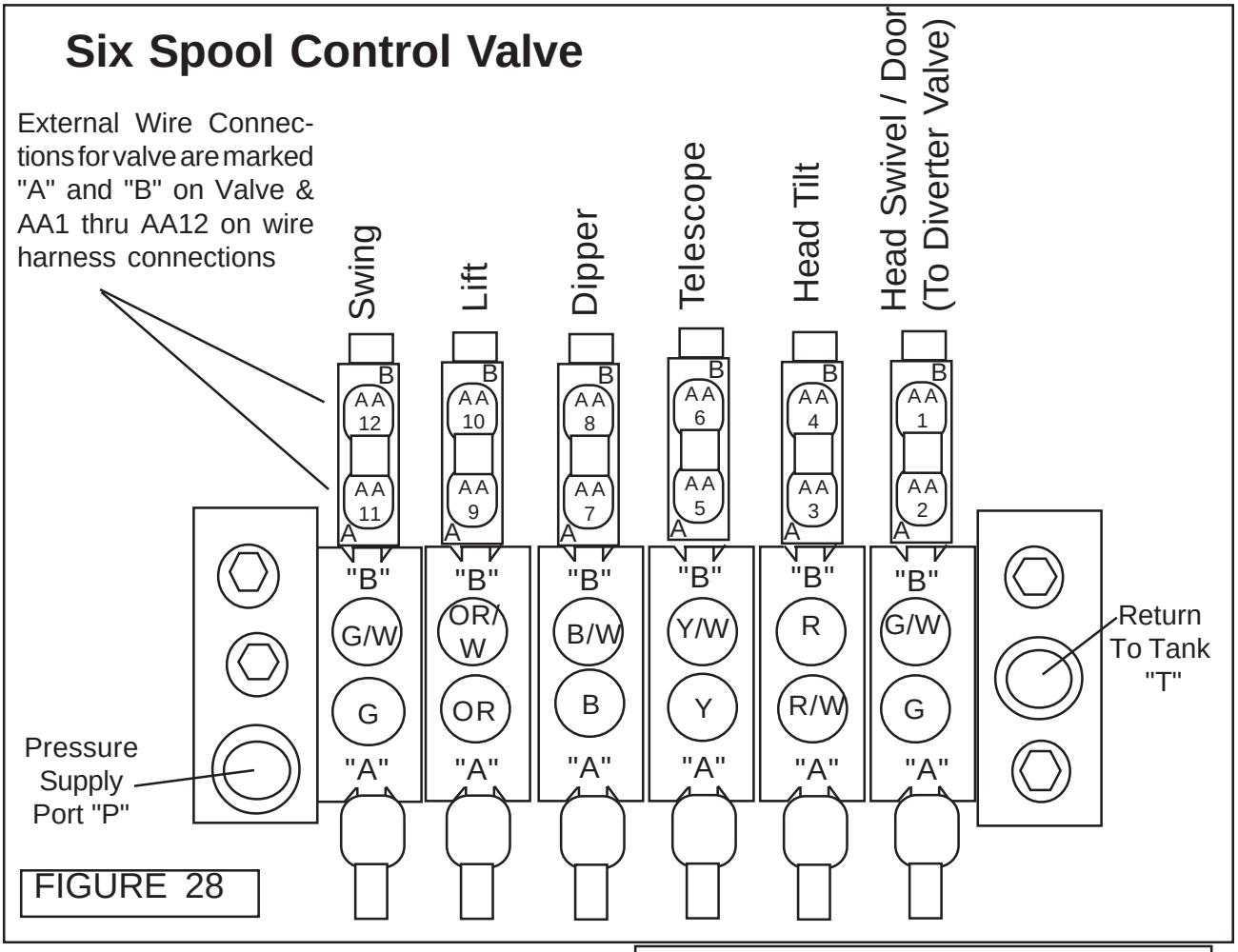

FIGURE 28

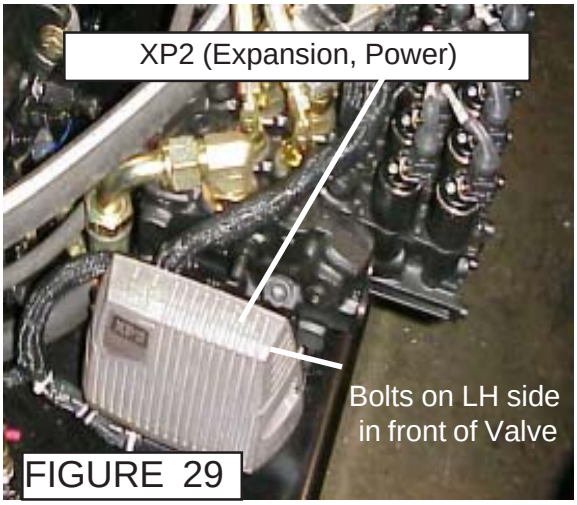

FIGURE 29

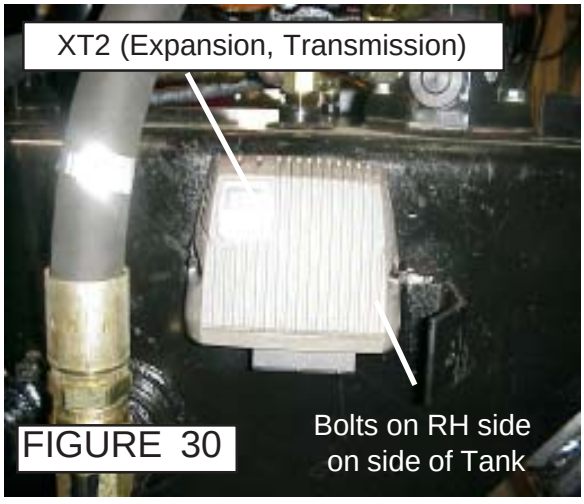

FIGURE 30

14. Diverter Valve Wiring Connection: The plug for the diverter valve is at the end of the exterior wiring harness and will be marked with code BB. The plug and wire will run down the LH side of tractor from the front mounted hydraulic pump / Tank. The diverter valve is bolted the the LH front Frame Mount bracket. The holes are already in the bracket and the diverter valve should have already been mounted. If valve has not been mounted it can be mounted now (See Figure 27, 28 , 31 & 38).

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Exterior Wire Harness Schematic P/N 02981375A

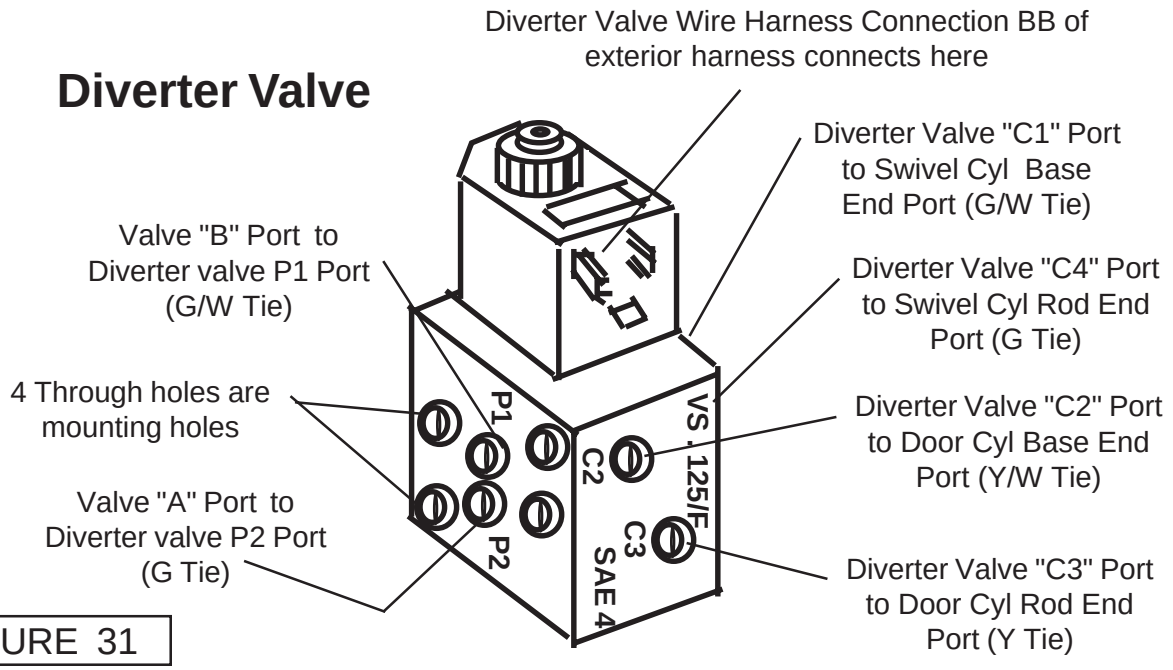
Diverter Valve
Diverter Valve Wire Harness Connection BB of exterior harness connects here
Diverter Valve "C1" Port to Swivel Cyl Base End Port (G/W Tie)
Valve "B" Port to Diverter valve P1 Port (G/W Tie)
Diverter Valve "C4" Port to Swivel Cyl Rod End Port (G Tie)
4 Through holes are mounting holes
Diverter Valve "C2" Port to Door Cyl Base End Port (Y/W Tie)
Valve "A" Port to Diverter valve P2 Port (G Tie)
Diverter Valve "C3" Port to Door Cyl Rod End Port (Y Tie)
P1
P2
C2
C3
VS .125/F
SAE 4

FIGURE 31

Connecting Oil Cooler And Fan Assembly to Exterior Wire Harness

15. Oil Cooler / Fan Assembly. The Oil cooler / fan assembly is for cooling the oil being returned from the Motor Case Drain. The fan is connected to the control box and is turned on & off automatically. It set to run on a program that will run the fan in the cooling rotation for a designated time, then stop, reverse the rotation (cycle to clean debris off of cooler, then stop and reverse the fan again and begin the cycle all over again.

The connection to the cooler on the exterior wire harness is marked with code R1. The connection from the fan will have two wires, a Blue (+ connection) and a black (- connection) (See Figure 32).

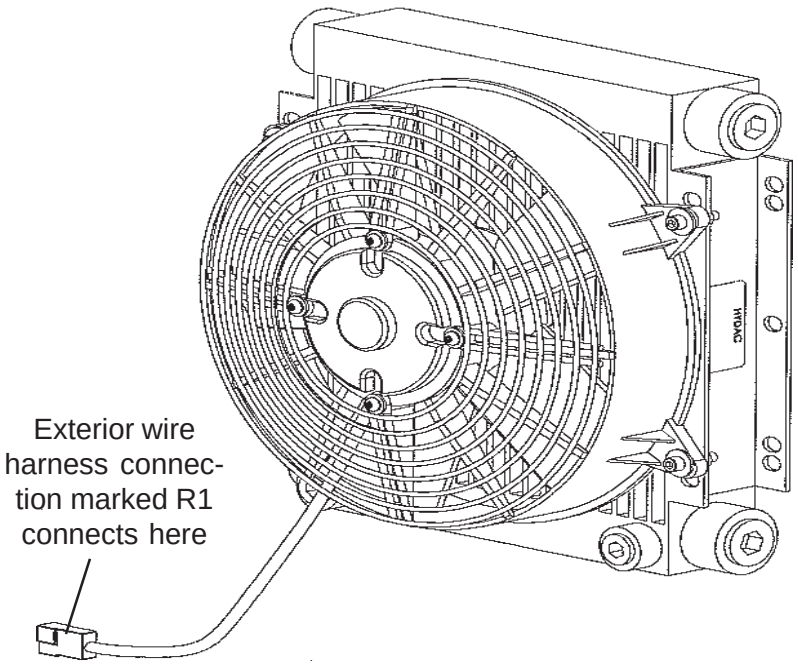

FIGURE 32

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Maverick Sensor Connections:

1. Instrumentation The Maverick Boom utilizes instrumentation for certain decision making activities. Listed below are the sensors included on this unit. Tank Temperature Sensor, Charge Pressure Filter Switch, Valve Pressure Filter Switch and Return Filter Switch.

2. Tank Temperature Sensor. The tank temperature sensor monitors the fluid temperature in the area of the pump suction screens. the temperature is real time and is used on the network to accomplish certain objectives. The first, is to display on the interface while the cutter circuit is operating. The second, is to be used to control the electric fan on the hydraulic cooler. At any time the fluid level reaches 150° F. the fan is activated and remains activated until fluid temperature drops to or below the desired temperature (See Figure 33).

3. The Charge Pressure Filter Switch The charge filter pressure switch has three wire coming out of it, a white , black and Blue wire. The Blue wire will not be used and will be cut off. The charge pressure filter switch is located at the filter in the charge loop on the hydrostatic pump (See Figure 34). The sensor monitors the back pressure created by the filter element when in use. When the back pressure reaches a setting of 50 psi the switch will trigger and prompt the operator for a filter element change of filter element.

4. The Valve Pressure Filter Switch The Valve pressure filter switch is located at the pressure filter in the valve pressure circuit, between the closed center load sense pump and the control valve (See Figure 35). The sensor monitors the back pressure created by the filter element when in use. When the back pressure reaches a setting of 50 psi the switch will trigger and prompt the operator for a filter element change.

WARNING! This filter does not have a bypass. The element must be changed at the appropriate time to avoid element damage and system contamination.

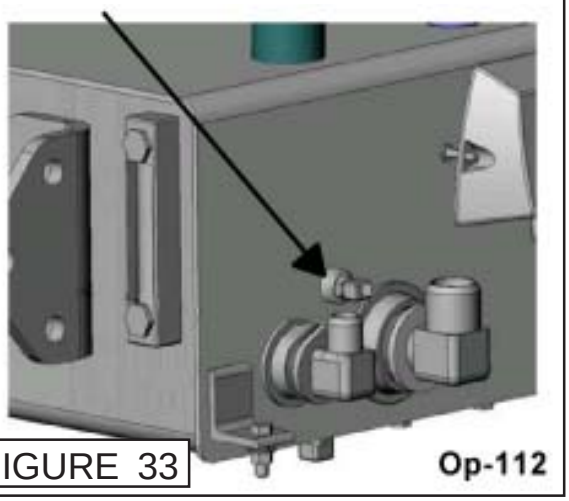

FIGURE 33

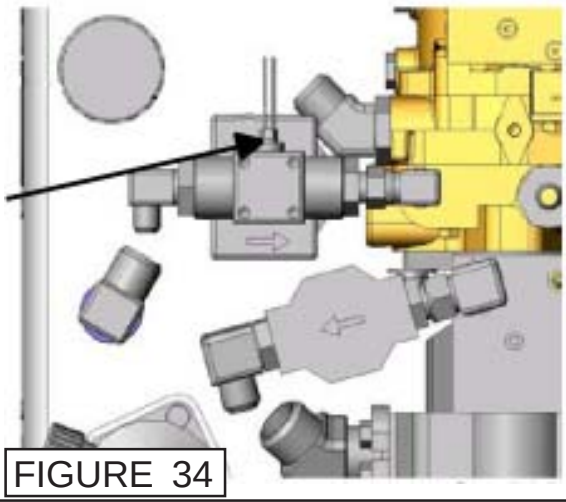
FIGURE 34

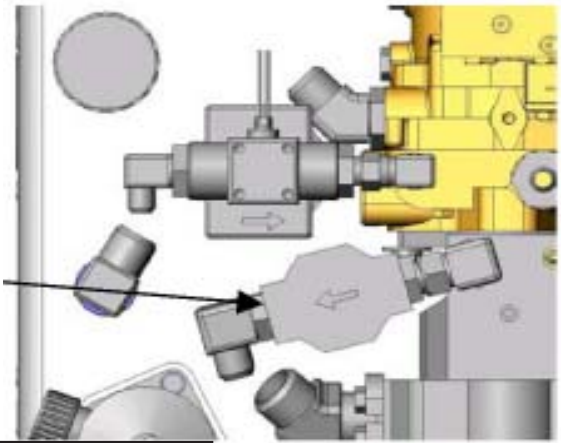

FIGURE 35

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5. The Return Filter Switch. The return filter switch is located at the return filter mounted on to the tank top. The fluid returning from the cylinder control valve is filtered before returning to tank at this location (See Figure 36). The sensor monitors back pressure created by the filter assembly while cylinder circuit is in operation. When the back pressure reaches 25 psi the switch will trigger and prompt the operator for a filter element change.

WARNING! This filter does not have a bypass. The element must be changed at the appropriate time to avoid element damage and system contamination.

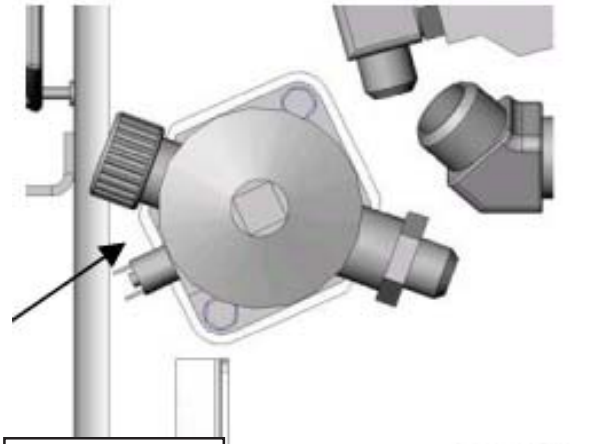

FIGURE 36 Op-115

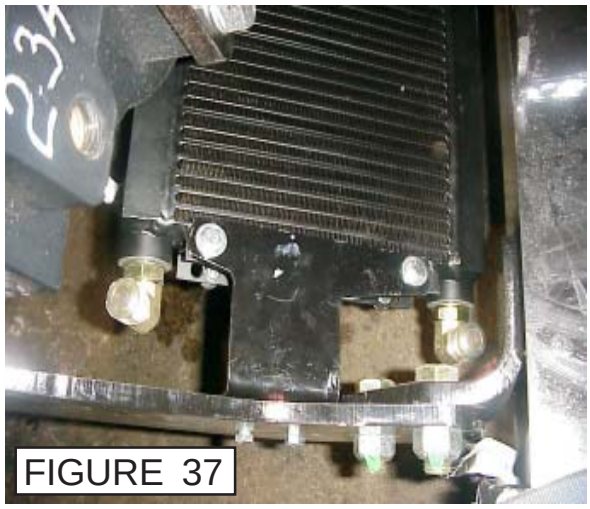

FIGURE 37

FIGURE 37A

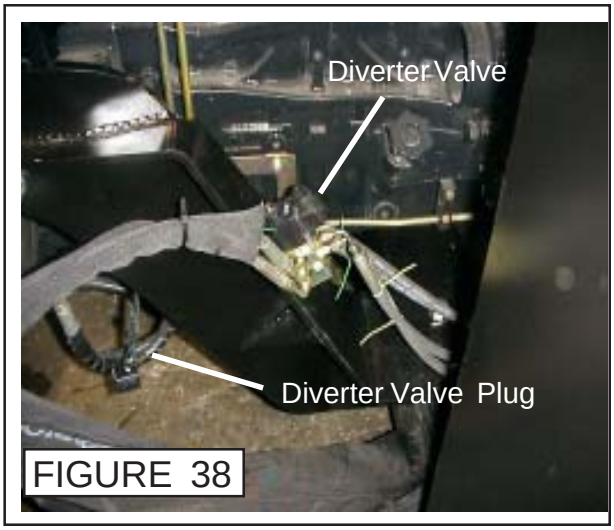

FIGURE 38

FIGURE 38A

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6. Oil Cooler & Fan Assembly. The oil cooler / fan assembly bolts to the tank rail mount bracket between tractor front axle and hydraulic tank. The mounting holes are in the tank rail mounting brackets (See Figure 37 & 37A). There will be two hose connected to the cooler, one from the motod case drain to the cooler and one from the cooler to the tank return, These hose will have blue plastic ties on them.

Installing Warning and Instruction Decals:

1. Always clean windows before installing decals. Windows must be dry and free of any oil, after cleaning do not touch windows before decals are installed. Take precaution to make sure decals are right side up and straight when installing them, they cannot be taken off and redone.

2. Identify Decals. Lay all the Decals out and ID each one so you will know which is installed where. The Decals will have the Part Number on them in the lower corners.

Decal No.	Description
00763977	Notice to Owner
02964677	Important - Boom Rest
02963524	Attention - Boom Swing
02965093	Proper Engine Operating
02965262	Warning - Hose Burst
02967827	Multi - Hazard

3. Multi-Hazard - Danger Decal. This is installed on the Left Side Window of Cab on the inside to Drivers Left. P/N 02967827 (See Figure 39)

4. Warning Hose Burst Decal. This installs on the Right Side Window of Cab on the Inside to Drivers Right P/N 02965262 . (See Figure 40)

5. Notice To Owner Decal. This installs on the inside top rear of Right Door Glass P/N 02964677 (See Figure 41)

6. Attention Boom Swing Decal. This installs on the inside top rear of Right Door Glass P/N 02963524

FIGURE 39

FIGURE 40

FIGURE 41

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NOTES

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Section 9

MAVERICK

Boom & Head Installation

John Deere Tractor JD-6615, 6715

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Boom / Head Installation

Boom Installation / Boom Hoses:

1. Turret Assembly, The turret assembly has the cylinders connected and the hoses are connected to the cylinders. The end of the hoses will be sticking up through the turret mount weldment between turret and tractor. The hoses will need to be connected there and routed to the hydraulic control valve. One hose will have a Green Tie and one a green and white tie where the come up throught the turret mount weldment. (See Figure 3).

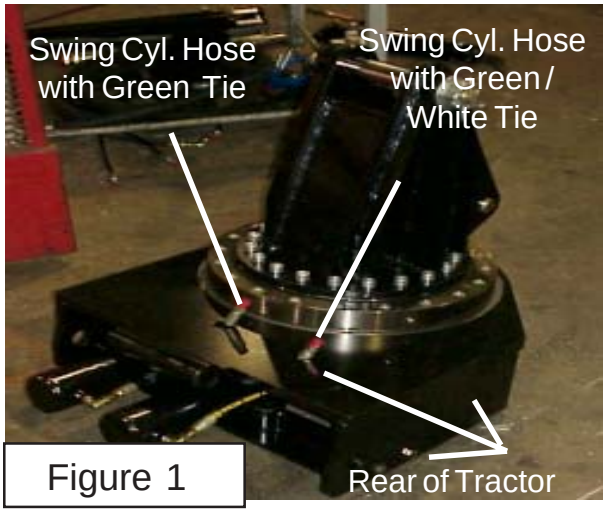

Figure 1

2. Booms Are recieved from the factory with the Sections of Boom Assmebled to together. The Boom Sections are assembled with the hydraulic lines and cylinder connected. The hose will be connected to the boom that are routed to the control valve and diverter valve and bundled together. (See Figure 4). The Boom Hoses are protruding out the turret mount end of the boom. The Hose connections on the head end will be shipped with metal caps on them, these are to protect the lines from contamination and should not be removed until the hoses are being installed (See Figure 5). The hose that attaches to the boom are sent installed on the head assembly and the hose will also have plugs in them.

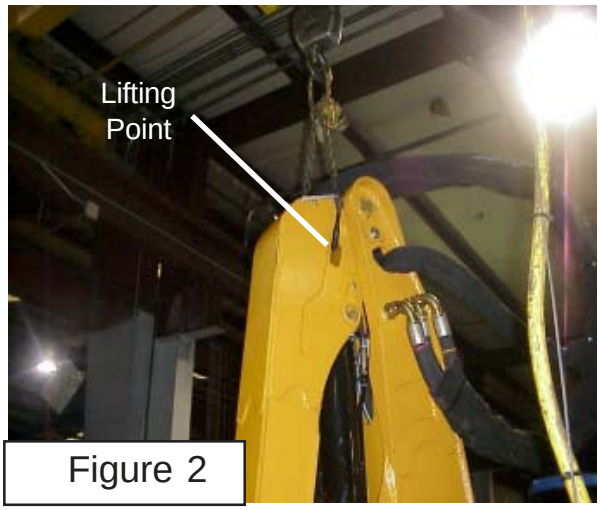

Figure 2

3. Boom Lift Cylinder. The boom lift cylinder will be connected to the boom at the rod end of the cylinder (See Figure 2 & 4) when it is shipped from factory. The hoses will also be connected to the cylinder. The retaining pin for the lift cylinder will be located in the turret assembly. The Lift Cylinder will be fastened to boom with tie wire. It will not be required to remove this tie wire before mounting boom on turret assembly. -

4. Booms & Lift Cylinder Mounting Pins. The Boom and lift cylinder mounting pins are shipped installed in the turrert assembly. Remove both pins in preparation to mounting the boom. (See Figure 3)

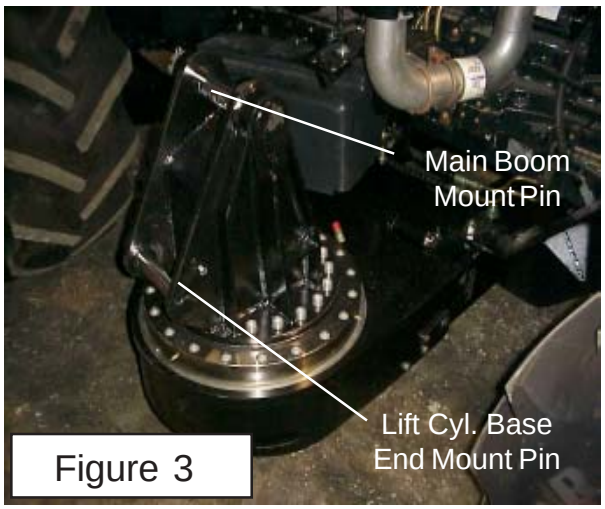

Figure 3

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Boom / Head Installation

5. Lower Boom onto Turret Assembly. Using an over head hoist lift the boom by placing a lift strap at the boom hinge point (See Figure 2), the boom assembly will be shipped with the two boom end tie wired together (See Figure 3A). The wire tie will need to be removed as it is tied through the boom hinge pin hole. Lift the boom above the turret assembly and lower it back down onto the turret assembly aligning the boom with the mounting pin hole. Install the Mount Pin through the turret and into the boom. Make certain the pin is installed correctly as one side of the pin is self locking in design. Tighten the pin retaining nut and install cotter pin. (See Figure 3C)

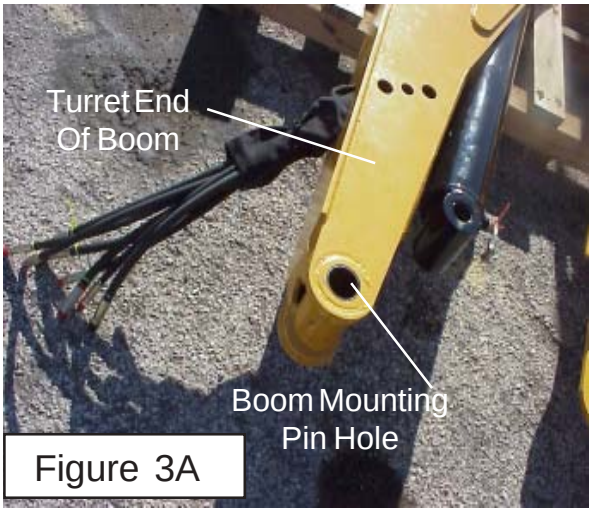

Figure 3A

6. Connect lower end of Lift Cylinder. The Base end (lower end) of lift cylinder will mount into the turret under the boom mount. The Cylinder will have to be extended to connect, If cylinder has to be extended the best way is to unplug the ends of the lift cylinder hoses where they come out of the boom, these will be the # 6 hose with the Orange Tie and the # 6 hose with the orange / White Tie. When pulling (extending or collapsing cylinder) always put the opened end of the hoses into a clean drain pan as oil will run out of the cylinder when extended or collapsed. After installing the cylinder lower mounting pin re-plug the hoses that were in the drain pan until ready to connect hoses.

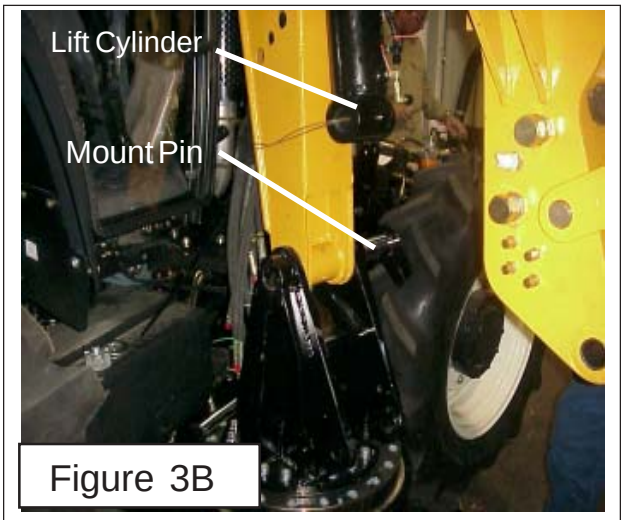

Figure 3B

7. Connect Head to Boom. The mounting pins to install the head onto the boom will be shipped installed in the mount weldment. Remove the mounting pins. Use the hoist to lower boom down over head to connect head, Align the upper head mount pin. The lower mount pin is the connect the lift link. (See Figure 4 & 5). The Door Cylinder and the Swivel Cylinder are shipped installed on the head with the hoses connected to the cylinder.

Figure 3C

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Boom / Head Installation

8. Heads Are received from the Factory with the Cylinder and Head hoses Attached to Head. The head will be received with the door cylinder, swivel cylinder and Motor attached to the head. The Hoses for the cylinders and the motor will connect to the boom. There is a decal that is installed on the side of the boom that shows where the hoses connect to the fitting that have the metal caps on them. The fittings for the head are located on the side of the main Boom. The hoses must be connected in the correct order to make certain of correct operation (See Figure 4, 5, 6, 7, 8, 9 & 10).

9. **Two Head Options.** There are two heads available, 60" (See Figure 4,5 & 6) which has the head Swivel attachment on it. The 50" Head which will not have the swivel attachement (See Figure 9 & 10) If using the 50" head leave the ports for swivel cylinder on boom capped (See Figure 8)

10. Connect Hose From Boom to Control Valve. The cylinder hoses will connect to the control valve mounted on the front of the tractor with the exception of the Door and Swivel Cylinder hoses they will connect to the diverter valve and then there are two hoses that connect to thediverterr valve to the 6 spool control valve (See Figure 11). The hoses for door and swivel will be routed under the tractor along the center under frame weldment to the diverted valve which will be mounted on the LH side of the tractor on the front frame mount bracket.

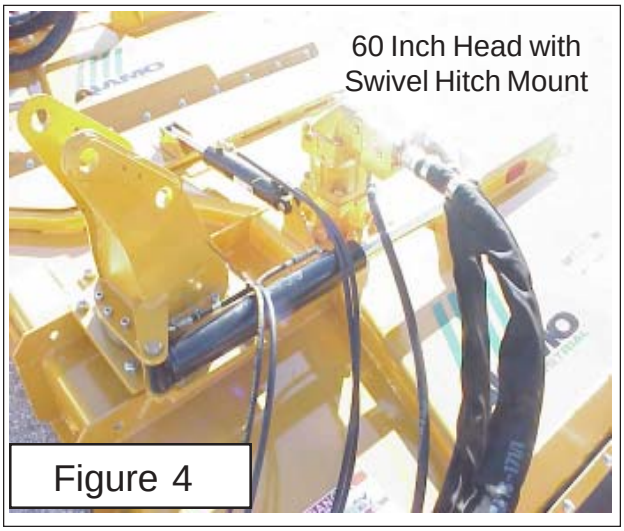

Figure 4

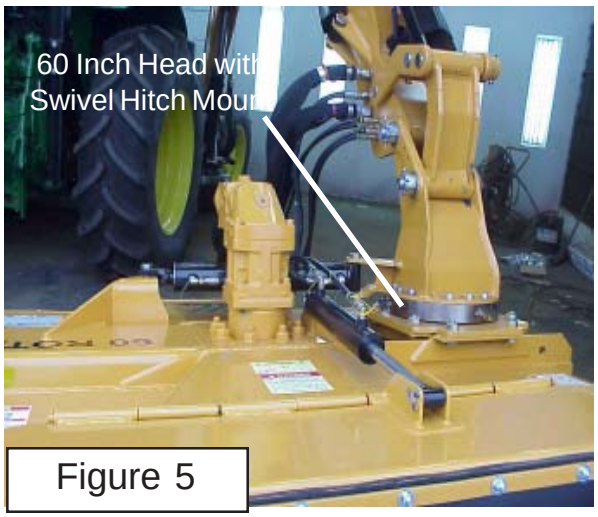

Figure 5

Figure 6

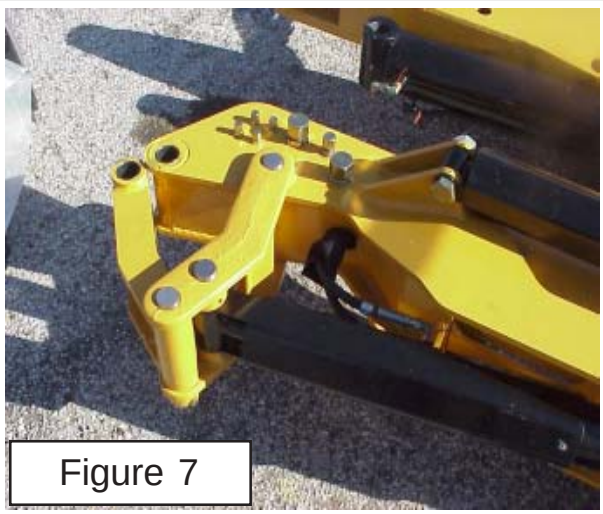
Figure 7

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Boom / Head Installation

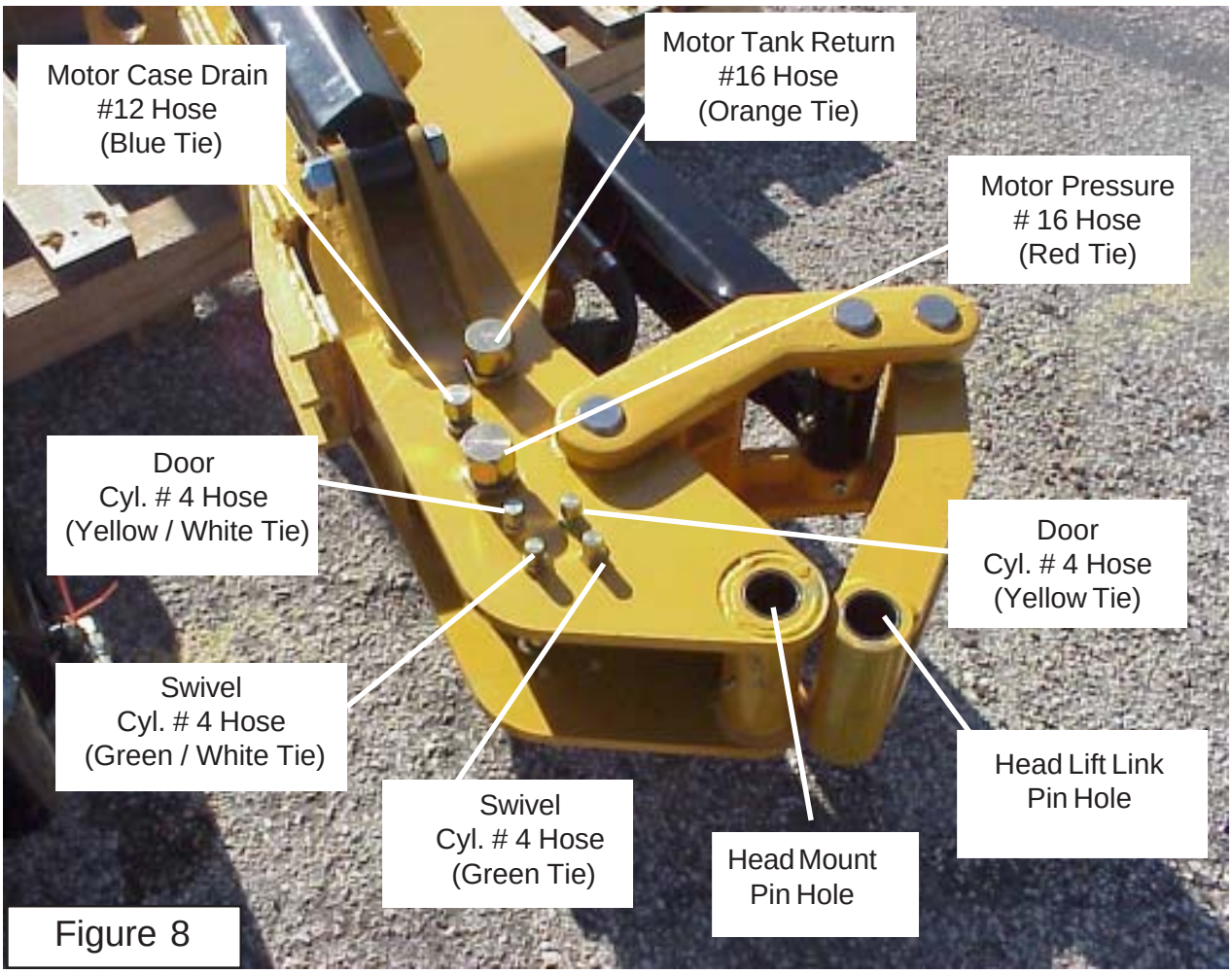

Figure 8

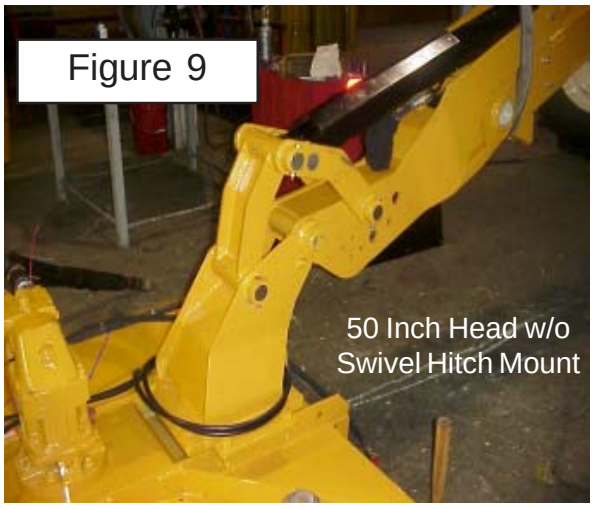

Figure 9

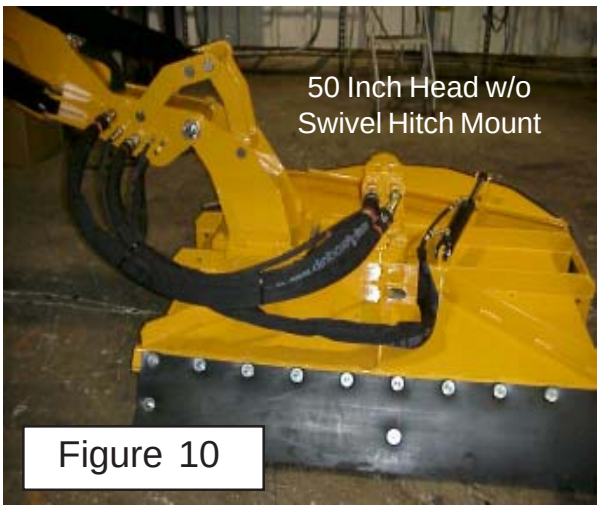

Figure 10

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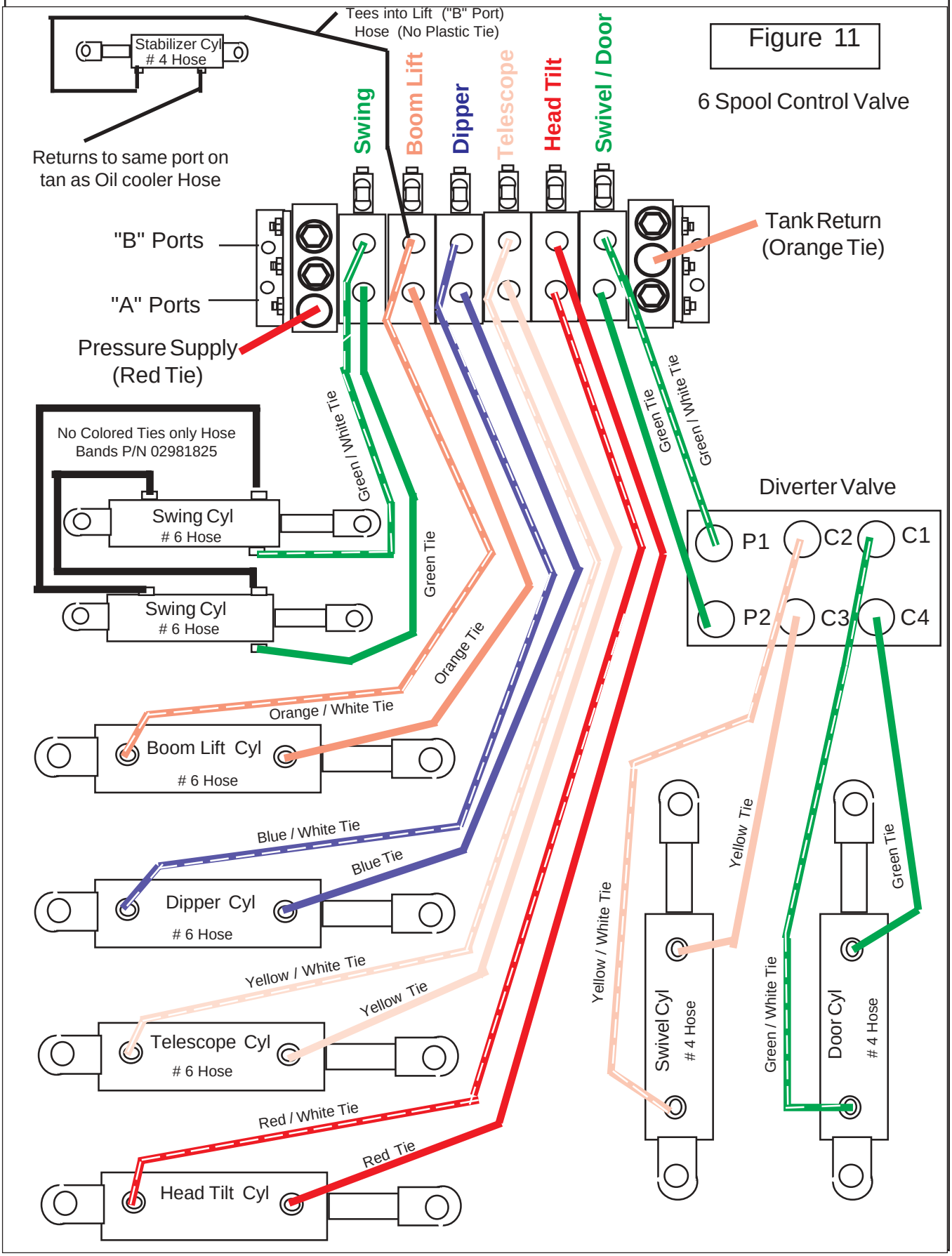
Boom / Valve Hydraulic Schematic



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Boom / Head Installation

11. Routing Cylinder Hoses from Boom to Valve The Hose from the boom to the valve will be split, the four hoses to the door cylinder and swivel cylinder will run together through a section of sleeving material to the RH side of the tractor (See Figure 12). On the Right hand side of the tractor the four hoses will connect to the diverter valve in the coded locations (See Figure 11). Tie the hoses to the frame under the tractor (See Figure 13). The two hoses from the diverter valve will continue along the LH side of tractor with sleeving material over them (See Figure 13) to the front of the tractor. They will have hose support brackets on them that bolt to the side of the tractor (See Figure 13) where they will be connected to the valve at the Door / Swivel Ports in the correct order (See Figure 16 & 17).

The other cylinder hoses from the boom will be inserted into sleeving material and also be routed under the tractor to the LH side (See Figure 14). They will continue up the LH side to the front of the tractor where they will connect to the valves ports. The hoses will be held to the frame with metal hose holders bolted to the tractor frame (See Figure 15).

NOTE: the hoses must be run through the sleeving material. On the LH side there is a hole in the center frame weldment the hoses can be run through it if wanted. Connect the hoses to the valve as shown (See Figure 11 & 17)

Figure 12

Figure 13

Figure 14

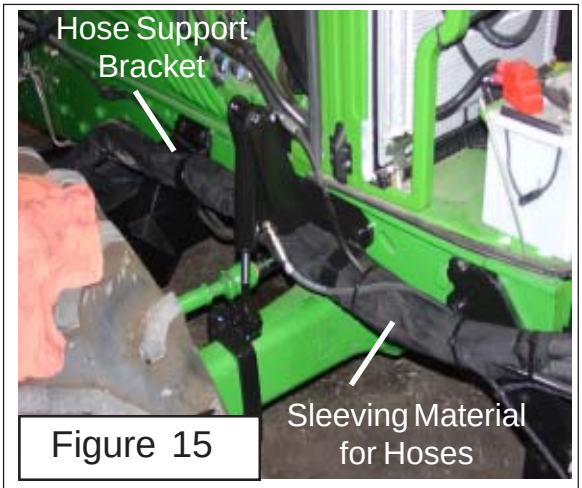

Figure 15

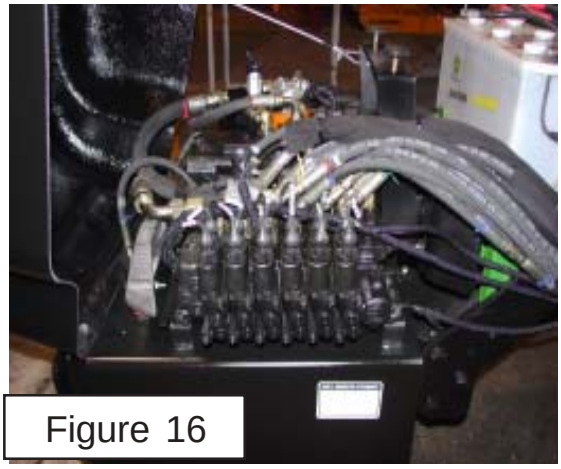

Figure 16

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Hydraulic Hose Connections

HYDRAULIC HOSE CODES AT VALVE

Hydraulic Hose Band Mark Color Codes: Hose's and/or fittings are marked with a Color Coded Plastic Band around it. Some Bands are a solid Color and some are Colored with a Stripe. The purpose of the colored bands are to provide a quick reference for hose and port connection. A metal band is also attached to the hose, on that band is an Alamo Industrial Part Number for reference if needing a replacement hose. **Always Check Hose Size, Color Code & Part Number (See Figure 4)**

Boom Cylinder Circuit Hoses:

Color Tie	(Code)	Hose Size	Port	Diverter	Hyd. Function
Green	G	SAE # 6	A	---	Swing, Back (Rod End)
Green / White	G/W	SAE # 6	B	---	Swing, Forward (Base End)
Orange	OR	SAE # 6	A	---	Lift, Down (Rod End)
Orange / White	OR/W	SAE # 6	B	---	Lift, Up (Base End)
Blue	B	SAE # 6	A	---	Dipper, In (Rod End)
Blue / White	B/W	SAE # 6	B	---	Dipper, Out (Base End)
Yellow	Y	SAE # 6	A	---	Telescope, In (Rod End)
Yellow / White	Y/W	SAE # 6	B	---	Telescope, Out (Base End)
Red	R	SAE # 6	B	---	Head Tilt, Up (Rod End)
Red / White	R/W	SAE # 6	A	---	Head Tilt, Down (Base End)
Green	G	SAE # 4	A	P2	Control Valve tor Diverter valve
Green / White	G/W	SAE #4	B	P1	Control Valve to Diverter Valve
Green	G	SAE # 4	---	C4	Swivel, CW (Rod End)
Green / White	G/W	SAE # 4	---	C1	Swivel, CCW (Base End)
Yellow	Y	SAE # 4	---	C3	Door, Open (Rod End)
Yellow / White	Y/W	SAE # 4	--	C2	Door, Closed (Base End)
Orange	OR	SAE#12	T	---	Valve Return To Tank
Red	R	SAE#12	P	--	Pressure to Valve.

Motor Circuit Hoses to Boom Connections: (Listed as reference)

Color Tie	(Code)	Hose Size		Hyd. Function
Red	R	SAE # 16	--	Pressure Flow to Motor
Orange	OR	SAE # 16	--	Return Flow From Motor
Blue	B	SAE # 8	--	Case Flow From Motor to Boom
Blue	B	SAE # 12	--	Case Flow at Boom to Tank

Diverter Valve.:

The Diverter Valve bolts onto the front frame mount bracket on the LH side of the tractor, the holes are in the bracket (See Figure 5 & 6). The Diverter valve is a electrical operated valve that allows the hydraulic pressure to be shared to operate two (or more if valves are stacked) functions with a single pressure supply. This valve is strictly a diverter valve and is designed to direct the pressure, not regulate the flow or pressure.

The Port openings on this diverter valve are marked with letter number codes which show which port is connected to which hose and where that hose connect on other end (See Figure 4, 5 & 6))

Port	Function & Connection
P1	Hose Hydraulic Pressure from Door / Swivel (B) Port on Control Valve (G/W Tie)
P2	Hose Hydraulic Return to Door / Swivel (A) Port on Control Valve (G Tie)
C1	Hose to Head Swivel Cylinder Base End (G/W Tie)
C2	Hose to Door Cylinder Base End (Y/W Tie)
C3	Hose to Door Cylinder Rod End (Y Tie)
C4	Hose to Head Swivel Cylinder Rod End (G Tie)

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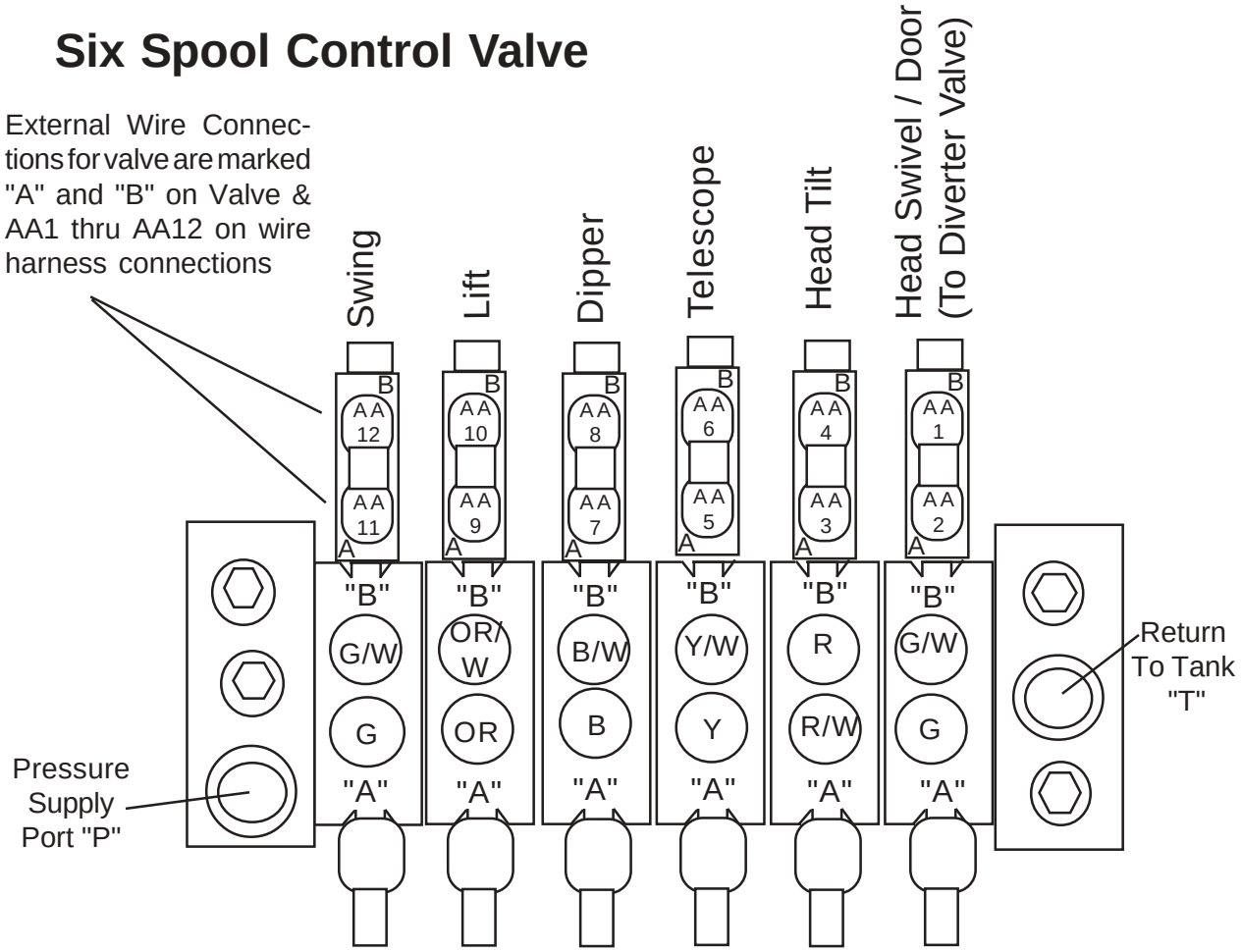
Six Spool Control Valve



Diverter Valve

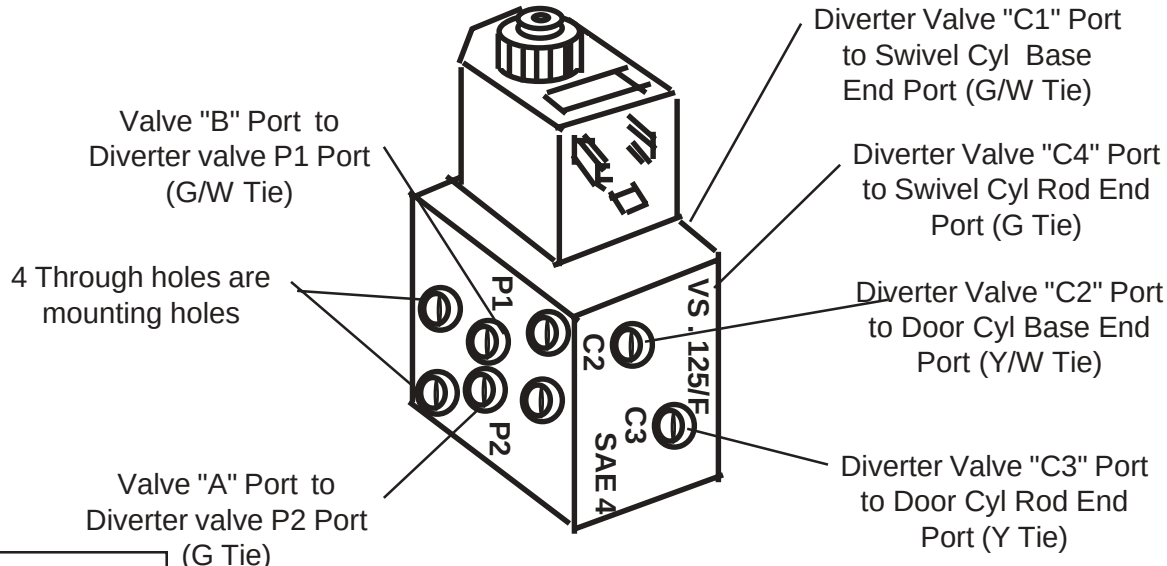

Diverter Valve "C1" Port to Swivel Cyl Base End Port (G/W Tie)
Valve "B" Port to Diverter valve P1 Port (G/W Tie)
Diverter Valve "C4" Port to Swivel Cyl Rod End Port (G Tie)
4 Through holes are mounting holes
Diverter Valve "C2" Port to Door Cyl Base End Port (Y/W Tie)
P1
P2
C2
C3
C4
VS. 125/F
SAE 4
Diverter Valve "C3" Port to Door Cyl Rod End Port (Y Tie)
Valve "A" Port to Diverter valve P2 Port (G Tie)

FIGURE 17

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Boom / Head Installation

12. Routing Boom Hoses to Pump The Boom hose to the pump will be routed on the RH Side of tractor, They will be run through sleeving material and hose support bracket (See Figure 18). The Pump hoses must be connected correctly to the boom and pump. There are 2 Pump to motor hoses and 1 motor case drain return hose for a total of 3. (Note Motor Case Drain hose will be run through the Oil Cooler and then return to tank).

First is the # 20 hose with the red plastic tie the lower connection at Boom, (See Figure 17), this is the pressure supply from the pump lower connection at pump (See Figure 20) to the motor connection at the boom.

Second is the # 20 hose with the orange plastic tie the upper connection at boom (See Figure 17). This is the Return hose from the motor upper connection at pump (See Figure 20).

Third is the # 16 Hose with the blue plastic tie the middle connection at the boom (See Figure 17) which is the case drain from the motor. This hose connects to the Oil Cooler / Fan Assembly which is mounted under tractor bolster behind hydraulic tank (See Figure 19) . There is a short #16 hose (See Figure 19) which will not have a plastic tie on it that will connect to the oil cooler, and then goes to the tank to a return port (See Figure 20).

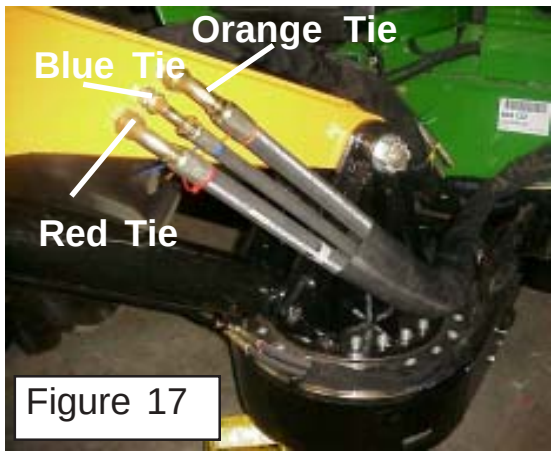

Figure 17

13. Pump Hose Routing at Tank. The hose routing at tank is shown as reference to the Pump hose routing which most of will already be connected when the tank and pump assembly is shipped from the factory. All hoses that you must disconnect and reconnect during pump and/ or tank assembly, refer to this figure for the correct location of hose (See Figure 21). DO NOT start tractor before all steps of the installation is completed, if tractor is started damage to the hydraulic system will occur.

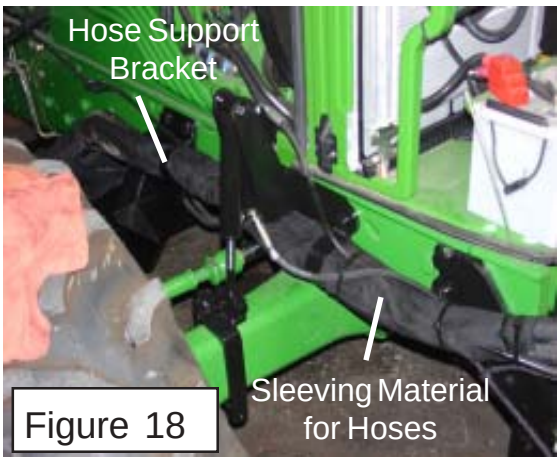

Figure 18

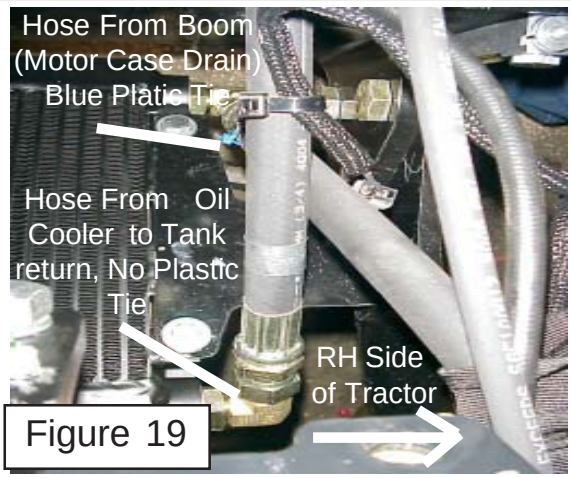

Figure 19

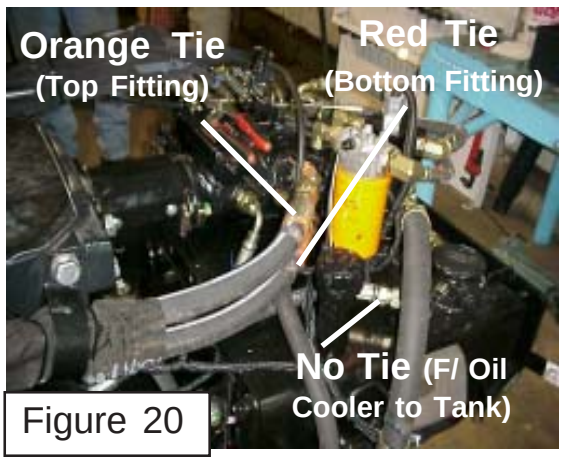

Figure 20

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Hydraulic Tank Hose Routing

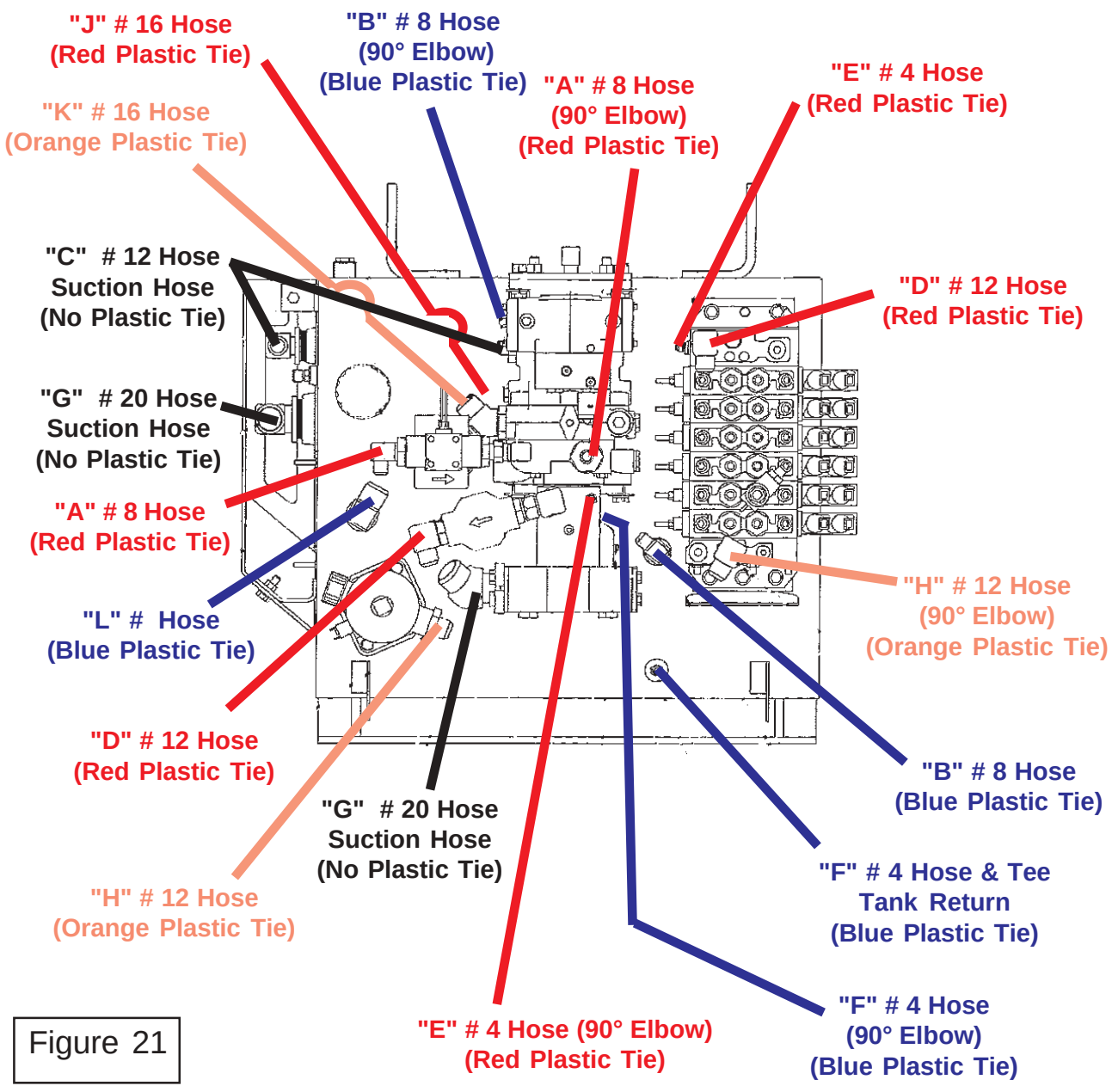

Figure 21

NOTE: Hoses are not shown in drawing above, this is for clarity. The hose routing is for the hoses which connect from one point to the other. Use the instructions and hose description listed to follow hose routing.

Example: Hose - A connects to one end marked A and the other end of hose connects to the other item marked A. This is done with the other letters as well, the hose must connect to the same letter markings on each end as in drawing. Some hose will be marked with a colored plastic tie.

Some hose will have a straight fitting or a 90° fitting. This is to allow hoses to be routed to where they clear other items, when connecting hose put the end on that has the correct fitting as noted in drawing with (90°) or the straight fitting if note marked hose routing that is to make hoses clear other items. Do Not connect hose to different letter items, all hose end must connect to the same letter on both ends.

TO ID HOSES: Always check Size, Length, Fittings and Color Plastic Tie to identify the hoses. Some hoses will have the same color tie but the size, length or fittings will be different.

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MOTOR & BOOM PUMP - HOSE ROUTING

Listed Below are the location, part number , hose size / type and function of the hoses at the tank, this list is to be used with figure 21 as a reference.

Item	Part No.	Qty.	Description
A	02981427	1	Hose, 8FJX - 8FJX 90° - 24" Lg. w/Red Tie (Charge Filter to Pump)
B	02981428	1	Hose, 8FJX - 8FJX 90° - 21" Lg. w/ Blu Tie (Case Drain to Tank)
C	02981429	1	Hose, 12FJX - 12FJX - 23" Lg. (Pump to Suction Filter) hose under pump and cannot be seen in drawing.
D	02981430	1	Hose, 12FJX - 12FJX - 31" Lg. w/ Red Tie (Pressure Filter to Supply)
E	02981431	1	Hose, 4FJX - 4FJX 90° - 35" Lg. w/ Red Tie (Pump Load Sense to Valve (PX) Connects to top side of pump as shown.
F	02981432	1	Hose, 4FJX - 4FJX 90° - 20" Lg. w/ Blu Tie (Pump Regulator to Tank) Connects to bottom side of pump not seen.
F	----------	1	Hose #4, Connects here w/ Tee Fitting (Connect to Base End Stabilizer Cyl)
G	02981433	1	Hose, 20FJX - 12FJX - 24" Lg. (Pump to Suction Filter)
H	02981462	1	Hose, 12FJX - 12FJX 90° - 20" Lg. w/ Org Tie (Valve Return to Tank)
J	----------	1	Hose, # 16 w/ Red Tie (Pressure from Pump to Motor) Bottom Port
K	----------	1	Hose, # 16 w/ Orange Tie (Oil Return from Motor) Top Port
L	----------	1	Hose. w/ Blue Tie (Oil Return from Oil Cooler to Tank)

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Section 10

MAVERICK

Fill Oil Tank Electronic Controls Setting

John Deere Tractor JD-6615

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Hydraulic Oil Installation 2 WD & 4 WD

Hydraulic Tank Filling:

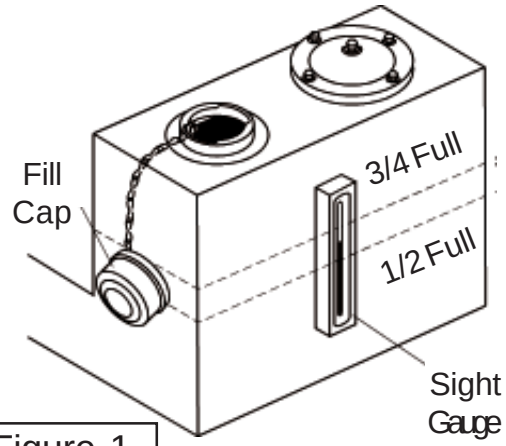

Figure 1

1. Filling With Recommended Hydraulic Oil. The oil used **MUST MEET** the requirements as to type and cleanliness level, **THIS IS A MUST**. The oil must be type **ISO Grade Hydraulic Oil w/ protection wear grade based on abient temperature (See Decal Figure 4)**. The grade of oil will vary with the ambient twmperature. The Fluid **Cleanliness level MUST BE ISO 16/14/11** rating. **MAKE CERTAIN** that the oil you are using meets this requirement. If Oil does not test to cleanleness reguirement, it will have to be filtered to clean it before installing it into the maverick hydraulic system. NEVER install or add Oil that does not meet these stadand requirenments.

2. Remove the Filler Cap and fill the Hydraulic Tank. Make certain the oil is ISO AW 100 Hydraulic Fluid with cleanliness level of ISO 16/14/11 is a must, however do not over fill or spill oil.

3. Check that all the hydraulic connections are complete and tightened on the Motor Hydraulic System and the Cylinder Hydraulic System.

4. Avoid hydraulic contamination by filtering the hydraulic oil while filling the hydraulic tank. Filter buggies or carts are commercially available for Pre cleaning oil before it is installed or hydraulic system cleanup. These consist of a high-efficiency, high-capacity filter, a circulating pump, a drive motor, and hoses for connecting to oil supply. **(See Figure 2 & 3)**

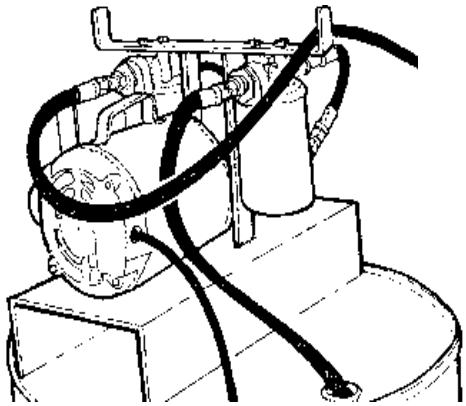
Figure 2

When adding hydraulic oil, use only new oil from a sealed barrel. Used oil or oil from an open barrel may contain high levels of contamination. Transfer the new oil into the hydraulic tank by using a hydraulic filter pump unit equipped with a properly operating micron filter to achive rquired cleanleness level is a must. This will insure that the oil being added is safe to use. Do not just pour the oil directly into the hydraulic tank since most oils (even from a sealed barrel) have contaminants that should be removed, before operating the hydraulic system. (See Figure 2 & 3).

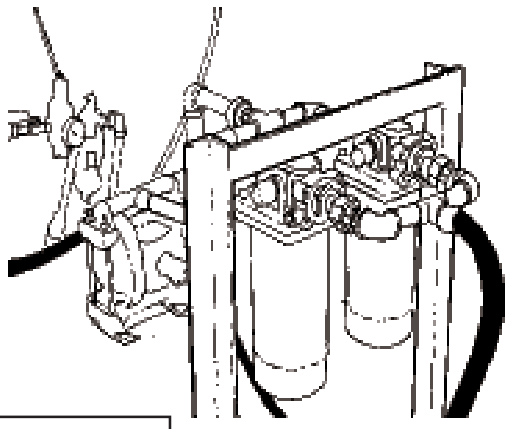
Figure 3

4. Important: Change the return filter in tank and suction filters at recommended hours of operation (See Operators Manual for maintenace schedule). The only hydraulic oil to be used is the AW ISOAW Tractor Hydraulic Oil (See Figure 4 for oil Grade) with a cleanliness level of ISO16/14/11. Always use a good Filter Maintenance program and Oil cleaning system before adding any oil to system..

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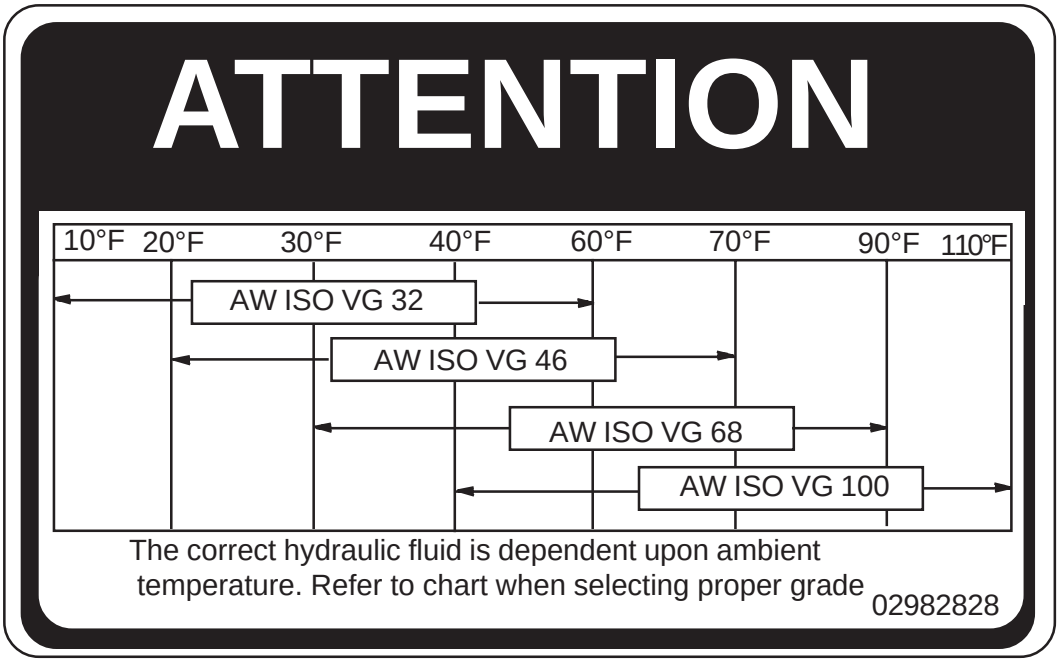

Figure 4

Prime Hydraulic Pump:

1. <u>The Hydraulic Pump MUST be Primed.</u> The hydraulic pump is primed by putting oil directly in to the pump. Looking at the pump, out near the end of the pump there is a Allen plug (See Figure 5). Remove this plug and install only approved hydraulic oil (See Step 1 through 3 of hydraulic tank filling). Fill the cavity completely full up to plug threads. IMPORTANT! This must be done before the unit is ever started. Make certain that the O-Ring Seal is on plug and reinstall it after cavity is full of oil, now the pump is primed. The Unit still will not operate until the next step of setting the electronics to operate the system.

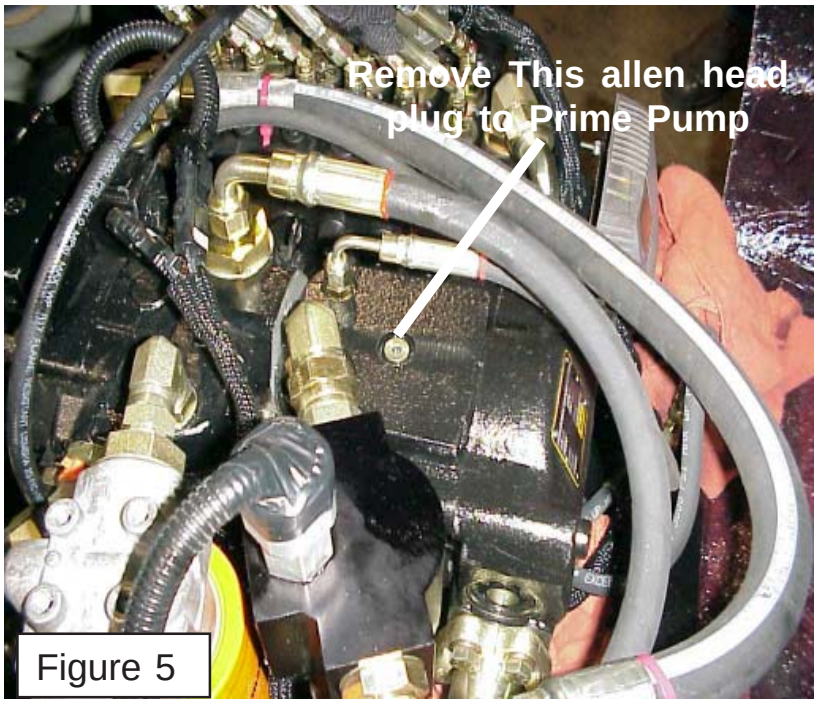

Figure 5

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Maverick Boom and Motor Control Circuits:

It is advised that this section be read before proceeding with any repairs or test, with the display and electronics used in this application the system will test many components for you. This is done by following the prompts on the display screen.

DO NOT pressure wash this system, while the components are sealed the soaps, acid and high water pressure used in the pressure washer can damage these seals and cause moisture to enter system causing damage.

DO NOT do any welding around these electronic components, If welding is required in a repair the electronic components MUST be disconnected (unplugged). Un plug all components, Joystick, Modules, Displays and any other electronic component. If not unplugged the current from the welded can cause serious damage to electronic components.

Additional repair and diagnostic procedures for the electrical system is available on the internet web site of the manufacture of this system at: **REFERENCE PRODUCT MANUAL FOR MDM DISPLAY. THIS MANUAL IS AVAILABLE FROM THE MANUFACTURER ON THE INTERNET AT www.iqan.com viewable and printable with ADOBE ACROBAT READER. If you do not have Adobe Acrobat Reader it can be obtained at www.adobe.com.** Make certain that the instructions you refer to is for the MDM system, the manufacturer has more than one system.

The boom and motor control is electronic over hydraulics. If these functions are not properly set or working properly the mower can not be operated. Also make certain that all fluid levels are OK and with in operating limits.

The first thing that should be checked is the main (electrical) power supply to the system, this can be checked on the display unit when power is on.

The set-up portion as shown in the next pages should be checked to make certain the joystick and motor functions are set correctly. Check all the connections if not operating properly. If the settings are not correct the system will not function properly.

Check the emergency stop (E-Stop) switch if it is in the off position the system will not operate and the system cannot be set properly.

Never short across any of these components as the type electronics used can be seriously damaged. Always use a volt / ohm meter to test any circuits.

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CONTROL VALVE - BOOM CONTROL

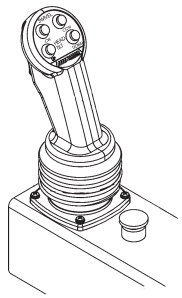
Maverick Boom Control System:

1. Operating the Boom Control functions is done so by means of a load sensing electronic over hydraulic system. There are three main areas of that system, the electronic network, instrumentation and hydraulic components.

2. System components are, The hydraulic System, The electronic network, The instrumentation and Operator Interface.

3. The Hydraulic System, The hydraulic components are responsible for transferring mechanical power into hydraulic power. There are two separate hydraulic circuits, the boom circuit and the mower head circuit.

4. How the boom is controlled, The system progression starts with operator input at the joystick (Figure 6- Item A) or other instrumentation. Input is received at the CAN module (Figure 5- Item B) and joins the network. That information is transferred via the network to the valve solenoid (Figure 5- Item C) which activates and moves the spool sending hydraulic fluid pressure to the cylinder (Figure 5-Item D) and moves the load.



Item-A Item-B Item -C Item -D

FIGURE 6

Maverick Mower Head Circuit:

1. The Motor Circuit. The motor circuit for the cutting head operation is operated through display (Figure 6- Item A). By selecting the activation parameter the coil will shift the servo-piston at the hydrostatic pump (Figure 7-item B), stroking the pump into the "On" position. Flow will then be supplied to the hydraulic motor at the cutter head (Figure 6-Item C). Activate the motor circuit while the engine RPM is at idle. Once activated, the engine RPM can be raised to the 540 PTO required speed, if the 540 PTO engine speed is not noted on the tractors RPM gauge consult tractor owners manual to find what the required speed is. At any time the Emergency stop switch (Figure 7-Item D) located on the joystick will deactivate the cutter motor circuit. The blade will stop within 6 second when the emergency switch is shut "Off"

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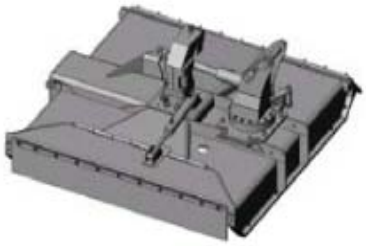
Maverick Mower Head Circuit: (continued from Previous page)

Item -A

Item -B



Item -C

Item -D

FIGURE 7

Maverick Electronic Network: (Figure 8)

Electronic Network. The electronic network is the control and communication network that receives and transmits data to certain components in the boom control system. Its purpose, is to manage the incoming and outgoing information.

There are five main components. The MDM is an operator Display that is located in the cab. The purpose of the display is to house the programming software for the system control and provide an interface between the operator and the Maverick Boom.

The interface is utilized through a multi-screen function that allows the operator to set individual parameters for customized control functions.

The display also provides tools such as an on board measurement device, useful for determining short circuits, component loss, and/or power supply issues. **REFERENCE PRODUCT MANUAL FOR MDM DISPLAY. THIS MANUAL IS AVAILABLE FROM THE MANUFACTURER ON THE INTERNET AT www.iqan.com viewable and printable with ADOBE ACROBAT READER. If you do not have Adobe Acrobat Reader it can be obtained at www.adobe.com.**

Make certain to view the MDM section as this is the type used on the maverick boom, there are listings at the web site that will not apply to the maverick boom.

FIGURE 8

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Maverick Electronic Network:

(continued)

The XP2 The XP2 is a controller module that is mounted at the front of the tractor next to the maverick control valve. The function of this component is to provide a gateway for incoming and outgoing information. Information is sent via the network to this module in order to provide control of the solenoids for valve operation (See Figure 9) **REFERENCE PRODUCT MANUAL FOR MDM DISPLAY. THIS MANUAL IS AVAILABLE FROM THE MANUFACTURER ON THE INTERNET AT www.iqan.com viewable and printable with ADOBE ACROBAT READER. If you do not have Adobe Acrobat Reader it can be obtained at www.adobe.com.**

XP2 (Expansion, Power)

Analog Inputs	4	Prop. Output	4x2
Digital Inputs	(4)	Digital Outputs	4
Freq. Inputs	(2)	E-Gas	-

Op-110

FIGURE 9

The XT2. The XT2 is also a controller module that is mounted at the front of the tractor on the side of the tank, The function of this component is to provide a gateway for incoming and outgoing information. This module receives input from instrumentation, then provides that information to the network for further utilization. **(See Figure 10) REFERENCE PRODUCT MANUAL FOR MDM DISPLAY. THIS MANUAL IS AVAILABLE FROM THE MANUFACTURER ON THE INTERNET AT www.iqan.com viewable and printable with ADOBE ACROBAT READER. If you do not have Adobe Acrobat Reader it can be obtained at www.adobe.com.**

XT2(Expansion, Transmission)

Analog Inputs	10	Prop. Outputs	2x2
J1909 CAN hub	1	Digital Outputs	6
Freq. Inputs	(3)	E-Gas	1

Op-111

FIGURE 10

The XS The XS is expansion module that provides extra input and output capabilities in order to gain more flexibility on the network (See Figure 11). The XS is responsible for receiving the signals from the joystick and other in cab inputs and making them available on the network. **REFERENCE PRODUCT MANUAL FOR MDM DISPLAY. THIS MANUAL IS AVAILABLE FROM THE MANUFACTURER ON THE INTERNET AT www.iqan.com viewable and printable with ADOBE ACROBAT READER. If you do not have Adobe Acrobat Reader it can be obtained at www.adobe.com.**

XS (expansion, signal)

Op-105

FIGURE 11

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Maverick Instrumentation:

Instrumentation The Maverick Boom utilizes instrumentation for certain decision making activities. Listed below are the sensors included on this unit. Tank Temperature Sensor, Charge Pressure Filter Switch, Valve Pressure Filter Switch and Return Filter Switch.

Tank Temperature Sensor. The tank temperature sensor monitors the fluid temperature in the area of the pump suction screens. the temperature is real time and is used on the network to accomplish certain objectives. The first, is to display on the interface while the cutter circuit is operating. The second, is to be used to control the electric fan on the hydraulic cooler. At any time the fluid level reaches 150° F. the fan is activated and remains activated until fluid temperature drops to or below the desired temperature (See Figure 12).

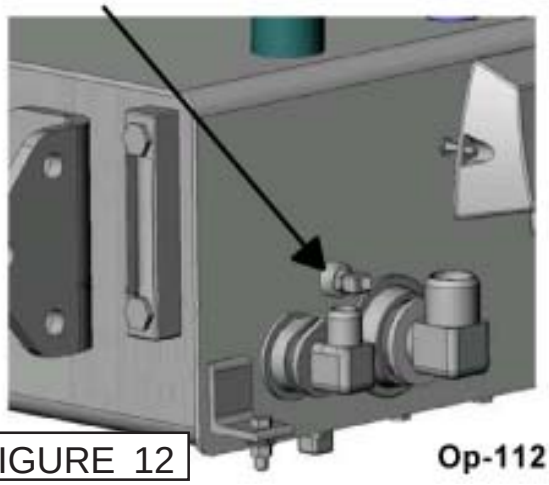
FIGURE 12 Op-112

The Charge Pressure Filter Switch The charge pressure filter switch is located at the filter in the charge loop on the hydrostatic pump (See Figure 13). The sensor monitors the back pressure created by the filter element when in use. When the back pressure reaches a setting of 50 psi the switch will trigger and prompt the operator for a filter element change of filter element.

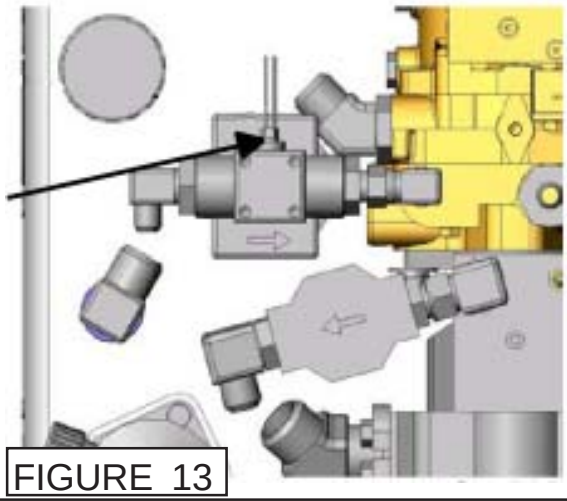
FIGURE 13

The Valve Pressure Filter Switch The Valve pressure filter switch is located at the pressure filter in the valve pressure circuit, between the closed center load sense pump and the control valve (See Figure 14). The sensor monitors the back pressure created by the filter element when in use. When the back pressure reaches a setting of 50 psi the switch will trigger and prompt the operator for a filter element change.

WARNING! This filter does not have a bypass. The element must be changed at the appropriate time to avoid element danmage and system contamination.

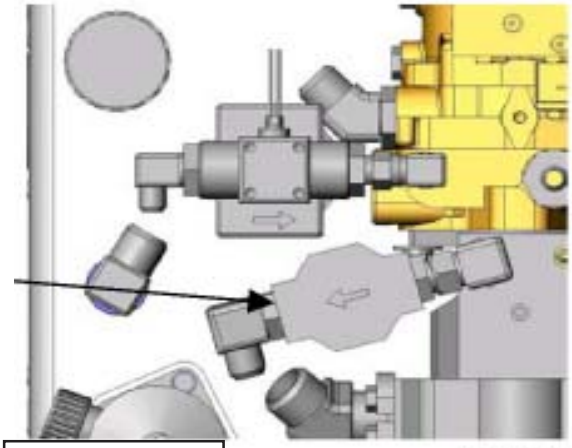
FIGURE 14 Op-114

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Maverick Instrumentation:
(continued)

The Return Filter Switch. The return filter switch is located at the return filter mounted on to the tank top. The fluid returning from the cylinder control valve is filtered before returning to tank at this location (See Figure 15). The sensor monitors back pressure created by the filter assembly while cylinder circuit is in operation. When the back pressure reaches 25 psi the switch will trigger and prompt the operator for a filter element change.

WARNING! This filter does not have a bypass. The element must be changed at the appropriate time to avoid element damage and system contamination.

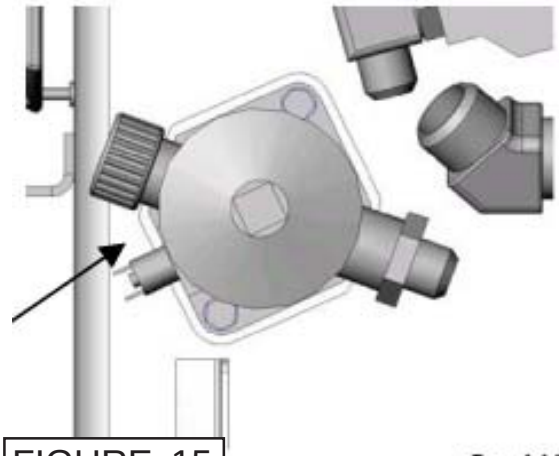


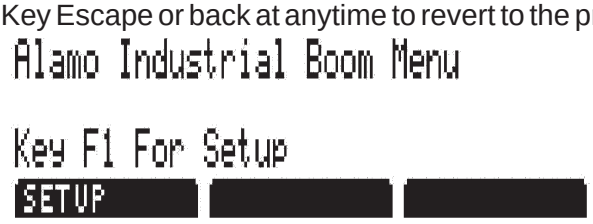
FIGURE 15 Op-115

Maverick Operator Interface :

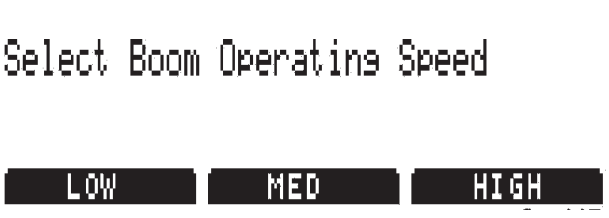
The Operator Interface The operator selects parameters provided by a menu system in the MDM display control box. The parameters are used to establish how the boom unit functions. The menu system is comprised of two sections. The first section is setup, the second section powers up the boom control circuit and cutter head circuit. The following steps outline how to successfully page through the menu system to execute operation. See the end of this section for Joystick control operation after start up procedure is completed.

Executing Set-Up The following representations will outline the steps necessary to execute set-up.

* Key Escape or back at anytime to revert to the previous screen or restart the set-up menu at any time.



* Key F-1 to access the set-up menu.



* Key the corresponding F-key to establish the desired boom speed. This parameter is provided for customizable operation.

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Maverick Operator Interface : (continued)

Choose Cutterhead for Set-Up
F1 All Others
F2 Timbercat Sicklebar

OTHERS | TIMBERCAT | BACK

* Key the corresponding F-key for the head attachment that will be used, This is an important step because this parameter chooses which direction the fluid will enter the motor. The Timbercat Sicklebar mower is the only head attachment that currently requires the operator to send reverse flow, for all others chose F-1 key for standard directional flow.

Set-Up Complete

F1 to Enable Joystick

ON | | MAIN MENU

* Key F-1 to activate Joystick, the Boom will not move until the joystick is activated. The Boom function Set-up is now complete, the boom speed, the head attachment has been chosen and the joystick has been activated.

Motor Power Condition

F1 to Enable Cutterhead

ON | | BACK

* Key F-1 to power motor. This is best done when the engine RPM is at idle speed. Doing this a t high RPM will cause the system pressure to surge sending fluid over the relief and causing excess heat to be introduced into the system.

* At any time the Cutter Head Motor E-Stop (emergency stop) can be pushed to disable the motor circuit. If this is done the Switch must be raised in the run position before the motor circuit can be reactivated.

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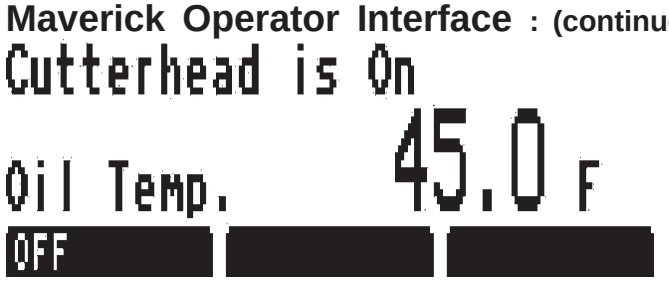
Maverick Operator Interface : (continued)



* At this time the motor circuit is powered and the mower head motor is active. This screen also shows the tank temperature in degrees Fahrenheit. To turn off the motor at this time Key F-1.

* The Joystick Master control switch must be off to prevent accidental movement of boom and cutting head when ever mower is not being operated, such as when in transport.

Cylinder Supply Pump Pressure Adjust (If Needed):

Special Note: If after setting the display controls, check to make certain that functions operate correctly. If the Boom will not lift. The Pump for the Cylinder supply may have to be adjusted. This is a simple process that will require a 7/16" wrench for this adjustment and a 1/2" wrench for the locking nut. Looking on the LH side of the pump there are two adjustments, one has a 7/16" hex head and the other a ridged round head, Only adjust the one with the hex head. DO NOT adjust or change the round ridged adjustment as it is set from the factory. Adjust the 7/16" hex one by turning it in till it seats completely (Do not force adjustment after is seats). Then back it back out 1/2 turn, this will give you the 2800 psi required to operate the boom. (See Figure 16 & 17). Hold the adjusting nut while turning the locking nut so the adjustment nut does not turn with it changing the setting.

FIGURE 16

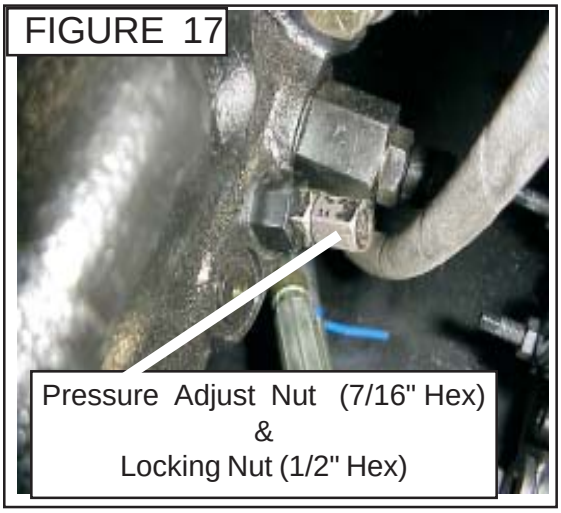


FIGURE 17

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CONTROL VALVE - JOYSTICK

JOYSTICK FUNCTIONS: (Figure 18)

To operate a function the following series of events must work.

1. The Joystick Controller is moved in the correct direction the required distance, During its movement an electrical signal is sent to the electric Controller in the proper Valve Section of the Control Valve.
2. The Electric Controller sends an electrical signal, which causes the Proportional Control Valves to actuate the proper amount based on the signal from the Controller. EXAMPLE: Valves 1 & 3 allow Pilot Pressure Oil to flow to the corresponding end of the Spool, Thus causing it to move. Valves 2 & 4 allow the Oil from the opposite end of the Spool to return to the Tank. (NOTE: Lift, Swing and Dipper functions are Proportional, Door and Tilt functions are "ON" or "Off" Only, See later section for explanation of Proportional).
3. The Spool position Transducer sends an electrical signal to the Electronic Controller which indicates the position of the Spool.
4. The Electronic Controller will continue to adjust the Valves (1 - 4) in order to maintain an equilibrium between the Joystick signal and the feedback signal.
5. Reaction time from the time the Joystick is moved until the Spool moves is approximately 300 milliseconds.

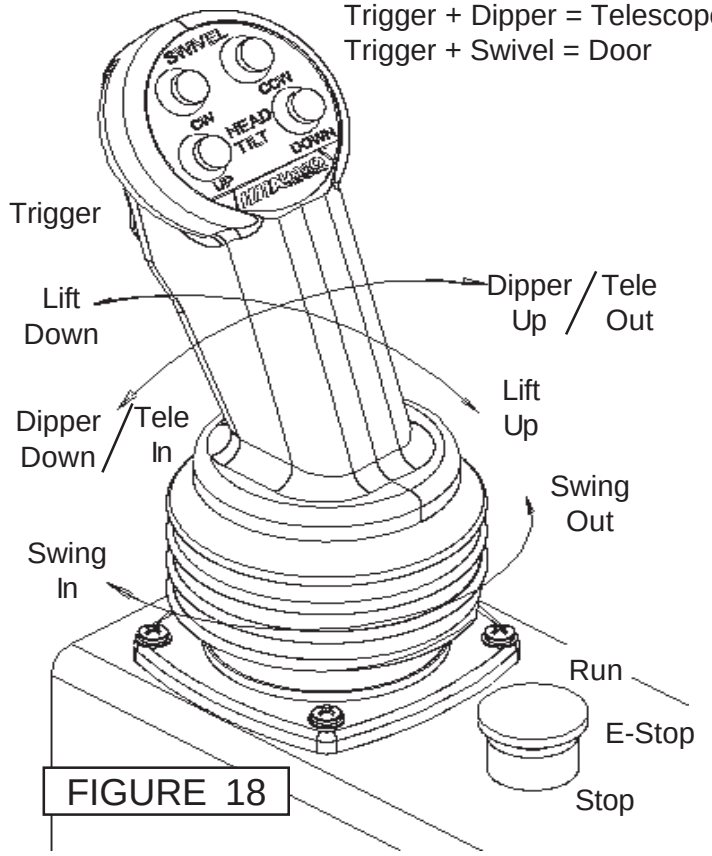

FIGURE 18

Joystick Functions

Push Buttons Only

Top Left	=	Swivel CW
Top Right	=	Swivel CCW
Bottom Left	=	Tilt Up
Botom Right	=	Tilt Down

Push Button & Trigger Switch

Top Left	=	Door Open
Top Right	=	Door Close

Handle Movement

Push Front	=	Lift Down
Pull Back	=	Lift Up
Push Right	=	Dipper Up
Push Left	=	Dipper Down
Rotate Right	=	Swing Back
Rotate Left	=	Swing Forward

Trigger & Handle Movement

Push Right	=	Telescope Out
Push Left	=	Telescope In

The Joystick is P/N 02981374. The Plug in connections are marked with numbers on the plastic plug. The wires are solid color or a color with a stripe. The Plugs should not fit but one way and that is by matching the codes on the plugs.

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Install Front Pump & Tank Cover

Install Front Pump & Tank Cover:

1. Install The Front Pump / Tank Cover. The front cover and tank cover are a bolt on part. The hinges are made onto the cover and the other half of the hinges are made on the tank mount bracket. There are two bolts (one each hinge) that bolt the two hinge halves together. The is a safety cable that will bolt to the cover and the tank mount bracket, this is to prevent the cover from opening to far forward and hitting the ground.

There are retaining latches that will bolt to the tank mount bracket and the cover. The holes for the fasteners will have to drilled by the installation technician in the tank mount brackets and the front cover. (See Figure 19, 20, 21 & 22)

FIGURE 19

FIGURE 20

FIGURE 21

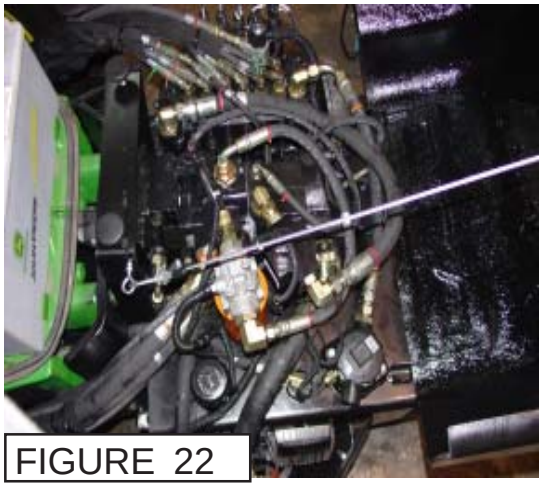

FIGURE 22

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Adjust Boom Swing Stop

CAUTION ! You MUST READ and UNDERSTAND this section as it is critcal BEFORE attempting to put boom rest position the first time. FAILURE TO PERFORM THIS ADJUSTMENT could cause damage to the cab of the tractor.

Boom Swing Adjustment:

1. Boom Swing Stop Location. The boom Stop adjustment cannot be seen from the top of the turret assembly (See Figure 23). If the bottom cover plate (See Item 24) is not already removed it will need to be, it is bolted on from the under side of the turret assembly. From the under side you will see the swing cylinders and cylinder pivot mounts (See Figure 25).

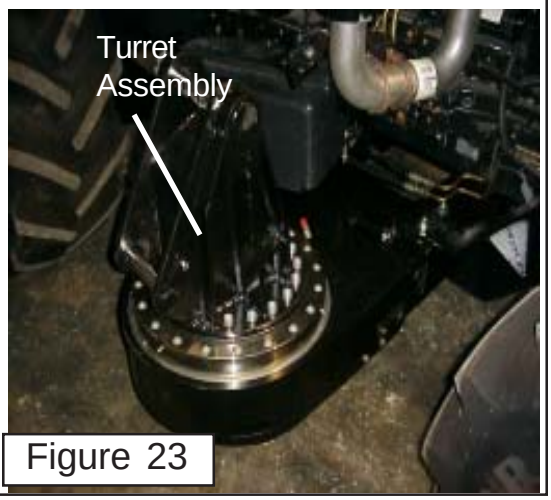

Figure 23

2. The Swing Stop Lug which is part of the Turret Cylinder Link Weldment (See Figure 27). On the side toward the rear there will be a lug with a bolt and locking nut in it (See Figure 27). Loosen the bolt and locking nut, turn the bolt outward.

3. Swinging Boom, DO NOT Swing Boom until the boom has been run with it sticking out away from tractor and all electronic control adjustments have been done. The boom must be working smoothly. Slowly (with low engine RPM) with some one guiding you swing boom inward toward cab until the boom rest lug is aligned with the boom rest pin (See Figure 26). Set boom securely down over pin.

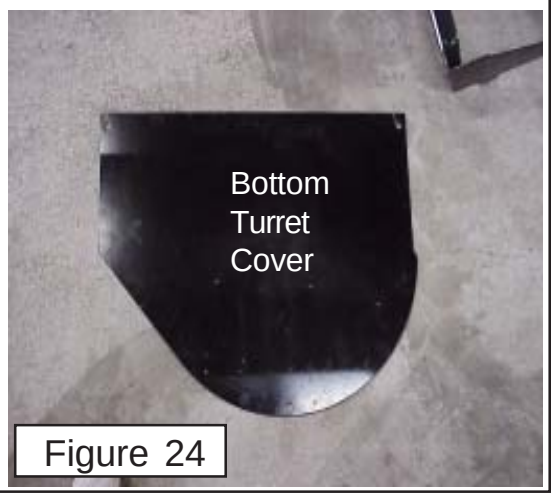

Figure 24

4. Final Swing Stop Adjustment. Unscrew the stop bolt (See Figure 27) until the head is against the swing stop lug of the turret cylinder link weldment (See Figure 27). Hold the bolt so it won't turn tighten the locking nut down against the turret stop swing lug. Recheck to make certain the boom will not hit the cab of the tractor. It will stop at the turret stop lug when properly adjusted. This may have to be adjusted more than once, NEVER allow unit to be run if Boom will hit the cab, this will damage cab.

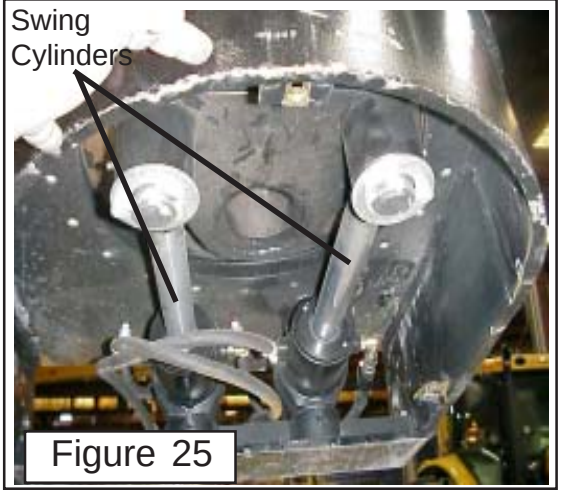

Figure 25

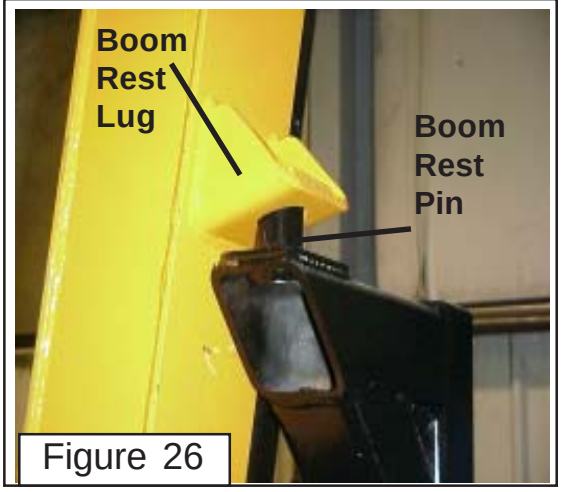

Figure 26

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Adjust Boom Swing Stop

Turret Assembly as seen from the bottom

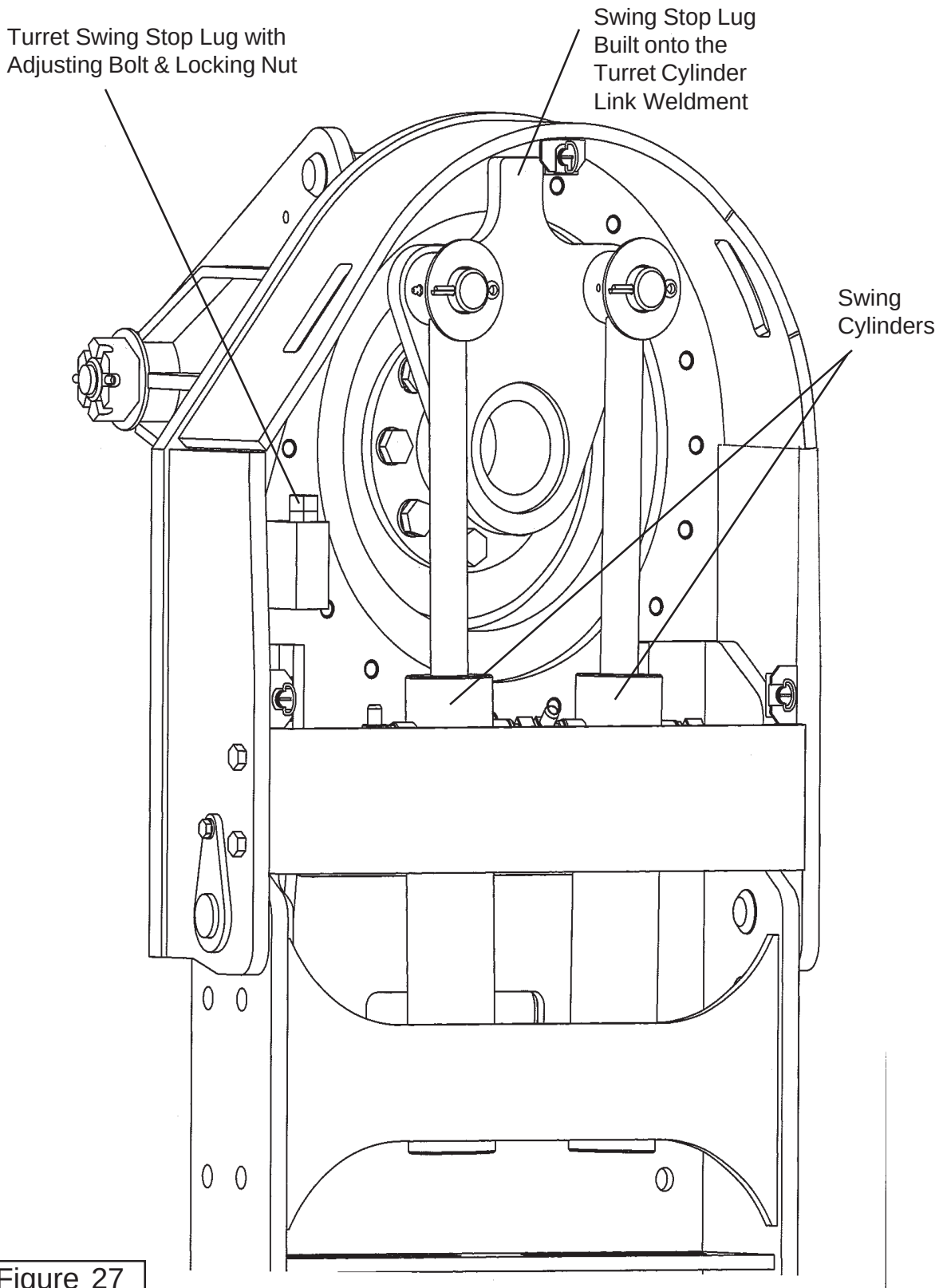

Figure 27

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NOTES

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Section 11

Maverick

Mounting Specifications

John Deere Tractor
JD-6615, 6715

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Mounting Specifications

John Deere 6615/6715 Cab/4wd

Effective Date: 01-25-05

10.00-16 (F-2) Min / 11.00-16SL (F-2M) Max **2wd** Front Tire
13.6-24 (R-1) Min/Max **4wd** Front Tire
18.4-34 or 460/85R34 (R-1W) Min/Max Rear Tire

Mount Kits:

30' Maverick **4wd** Mount Kit 02982395

Options:

Extra Maverick Installation Manual 02982434

Standard Features:

1. Replacement arm rest with joystick console.
2. Neapco style driveline with double U-joints.
3. All mount kits include a 1400# wheel weight.
4. 30' mount kits include an additional 408# auxiliary weight kit.
5. 3/8" Lexan replacement door and side window (right side only).
6. ~9 1/4" of ground clearance with the min. tire size shown.
7. Front axle stabilizer kit *(4wd models only)*.

Restrictions:

1. 2wd tractors must be equipped with heavy duty, eight bolt front wheel hubs & spindles.
2. 30' Maverick booms must be mounted on 4wd tractors only due to front axle spindle loading.
3. The right hand rail must be removed for boom transport clearance.

Manual Can Be Used For Other Models

This Manual can also be used to mount these models 6415, 6420, 7220, 7320, 7420 & 7520. The instructions will be the same but some of the components will be numbered different even though they may look the same. Use the packing slips that are shipped with the kit to determine part number. Do not use part numbers in this section, they may or may not be the same for other model, part numbers in this section are for 6615 & 6715 tractor models

Replacement Seat Arm Rest for Joystick

Universal Joint Style Driveshaft

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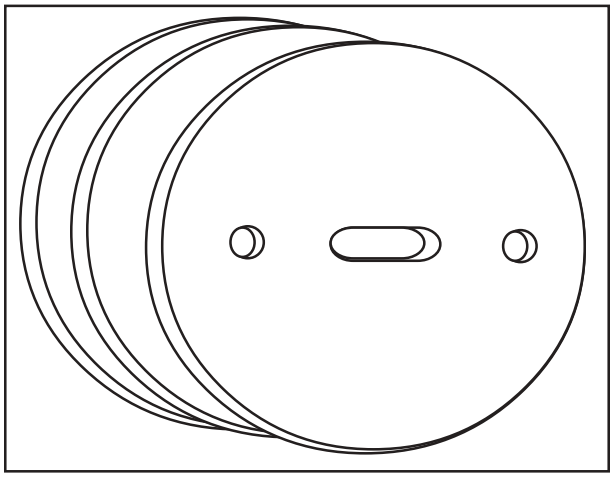
Mounting Specifications

Wheel Weight, 1400 lbs.

Wheel Weight Mounting Bolts



Auxiliary Wheel Weights (qty 3 of 136 lbs ea. for total 408 lbs) Bolt on

RH Door Lexan Replacement Door

Ground Clearance

Front Axle Stabilizer, 4 WD Only

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Common Box - Component List

IMPORTANT NOTICE; These are parts that are shipped with every unit, these parts will remain the same no matter which size boom is used or which model tractor is used. **DO NOT** order any of these parts unless you are certain that that is what you want, most theses a are complete assemblies and may contain more prts than are wanted to perform repairs. If ordering parts that are listed here it is recommended that you look the parts in a regular parts manual under the specific assembly number.

02981781 Common box Consist of the Following Items:

ITEM	PART NO.	QTY.	DESCRITION
1.	00037200	7	LOCKNUT, TOPLOCK 3/4”-NC
2.	02981381	1	PUMP COVER ASSEMBLY
3.	02959924	12	LOCKNUT, TOPLOCK 1/4”-NC PLB
4.	10058000	10	BOLT, HEX HEAD 1/4”-NC X 1” PL GR5
5.	02981441	2	KNOB, CR30 X 1-1/2” STUD
6.	00024100	6	FLATWASHER, 1/4” PL STD
7.	00992000	3.3	CABLE, 1/4” AIRCRAFT (7X19)
8.	00001000	2	CABLE CLAMP
9.	02981377	1	OIL COOLER ASY W/ FAN
10.	00015800	8	LOCKNUT, TOPLOCK 3/8”-NC
11.	00011100	12	FLATWASHER, 3/8” STD
12.	02981383	1	COOLER MOUNT, RH
13.	02981384	1	COOLER MOUNT, LH
14.	02090800	2	ADAPTER, HYD ELBOW 12MB - 12MJ90°
15.	02962181	6	ADAPTER, HYD STRAIGHT
16.	02977622	1	DIVERTER SOLENOID VALVE
17.	02981803	1	VALVE AND HYD TANK ASY (Includes the Next 47 Items)
	02981373	1	INDICATOR, ELEC W/PACKARD
	02981704	1	MOUNT, MODULE
	03200762	1	ADAPTER, HYD ELBOW 6MB - 4MJ 90°
	02962181	2	ADAPTER, HYD, STRAIGHT
	00015800	7	LOCKNUT, TOPLOCK 3/8”
	00011100	5	FLATWASHER , 3/8” STD
	00753642	7	BOLT, HEX HEAD 3/8” -NC X 1-1/4” PL GR5
	02964135	1	ADAPTER, HYD STRAIGHT
	02090800	4	ADAPTER, HYD ELBOW 12MB-12MJ90°
	02981371	1	FILTER, MEDIUM PRESSURE
	00001800	4	LOCKNUT, TOPLOCK 1/2”-NC PLB
	02981436	1	KIT, FLANGE 20, CODE 61
	02981463	1	ADAPTER, FLANGE 1-1/4” X 20MJ 45°
	02981468	1	BRACKET, SHIPPING ONLY
	00002700	2	FLATWASHER, 1/2” PL STD
	00001300	4	LOCKWASHER, 1/2”
	02892000	6	BOLT, HEX HEAD 1/2"-13 NC X 1-1/2" PL GR8
	02968923	1	FILTER ASY, PRES ELEMENT
	63042700	1	ADAPTER, HYD, STRAIGHT
	03200587	1	PLUG, HEX HEAD #8MB
	02981372	1	FILTER, HEAD W/IND PORT
	02822700	1	ADAPTER, HYD ELBOW
	02968167	1	ADAPTER, HYD STRAIGHT 16MB - 8MJ
	02981435	1	ADAPTER, HYD 10MB - 10 FJX90 ST
	02043600	2	ADAPTER, HYD ELBOW 16MB -16MJ45°
	02981369	1	PUMP, LS VARIABLE DISP
	02978986	1	PUMP, MED DUTY HYDROSTAT
	02981388	1	TANK ASY, HYDRAULIC

Continued Next Page

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Common Box - Component List

02981781 Common box Consist of the Following Items:

(Contiuned from previous page)

ITEM	PART NO.	QTY.	DESCRITION
	02981427	1	HOSE, # 8 - 8FJX - 8FJX90 - 24" LG
	02981428	1	HOSE, # 8 - 8FJX - 8FJX90° - 21" LG
	02981429	1	HOSE, # 12 - 12FJX - 12FJX - 23" LG
	02981430	1	HOSE, # 12 - 12FJX - 12FJX - 31" LG
	02981431	1	HOSE, # 4 - 4FJX - 4FJX90 - 35" LG
	02981432	1	HOSE, # 4 - 4FJX - 4FJX90 - 20" LG
	02981433	1	HOSE, # 20 - 20FJX - 20FJX - 24" LG
	02981462	1	HOSE, # 12 - 12FJX - 12FJX90 - 20" LG.
	02981986	1	DECAL, HOSE & ELEC CONNECTION
	02979473	1	DECAL, AW ISO VG 100
	02971123	1	DECAL, WARNING PRESSURIZED TANK
	02965262	1	DECAL, WARNING HOSE BURST
	02971943	1	DECAL, ALAMO IND YELLOW
	02981888	1	ASY, VALVE & FITTINGS
	02968896	1	PLASTIC TIE, ORANGE 11LG
	02968894	1	PLASTIC TIE, RED 11LG
	02971943	1	DECAL, ALAMO IND YELLOW
	02982347	1	ADAPTER, HYD 16MB - 10MJ STRAIGHT
	02972064	1	ADAPTER, HYD ELBOW 16MB - 8MJIC 90°
18.	02981805	1	ELECTRONIC KIT (includes the following 9 items)
	02981374	1	CONTROLLER, 3/AXIS 5 BUTTON
	02981375	1	HARNESS, WIRE, CONTROLS
	02981376	1	HOUSING, DISPLAY & SWITCH
	02981531	1	MODULE, XP2, EXPANSION
	02981532	1	MODULE, XT2, EXPANSION
	02981533	1	MODULE, XS, EXPANSION
	02964028A	1	SWITCH, PUSH PULL
	02982252	1	DWG, INST MAVERICK HARNESS
	02982340	1	ASY, MDM MODULE & PROGRAM
19.	02981517	2	BOLT, EYE TURNED 1/4"-NC20 X 1"
20.	02976531	10	ADAPTER, HYD ELBOW 6FJX - 6FJX45°
21.	02981953	5	HOSE HANGER, FORMED
22.	02981787	1	BOLT, HEX HEAD 3/4"-NC X 1-1/2" PL GR8
23.	02981988	2	DECAL, JOYSTICK OPERATION
24.	02981992A	1	OPERATORS MANUAL & PARTS MANUAL ASSEMBLY
25.	02918600	6	BOLT, HEX HEAD 3/4"-10NC X 2" PL GR8
26.	00011400	4	BOLT, HEX HEAD 3/8"-NC X 1"
27.	00023100	4	BOLT, HEX HEAD 3/8"-NC X 1-1/2" PL GR5
28.	00017000	2	LOCKWASHER, 1/4" PL STD
29.	00776031	1	CANISTER, F/ MANUALS
30.	00776481	1	DECAL SHEET, CANNISTER MANUAL
31.	02977417	1	DECAL, OPERATORS MANUAL INSIDE
32.	107079	1	WIRE, BLACK 14 GA. X 24" LONG
33.	02982339	2	OVAL SLEEVE, 5/32" DIA.
34.	D377	1	BOOKLET, DECAL BOOM MOWER
35.	02981822	1	HOSE BRACKET WELDMENT
36.	00019600	1	LOCKWASHER. 1/2" HEAVY PL
37.	02892000	1	BOLT, HEX HEAD 1/2"-13NC X 1-1/2" PL GR8
38.	02981992CA	1	MANUAL CANNISTER ASSEMBLY

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Mounting Component ID 30 ft. Cab 4 wd

IMPORTANT NOTICE: The following Part / Assembly Numbers are for reference and should not be ordered as replacement parts, unless all the components in that assembly are wanted. These will break down to bills of material of the components. Some of numbers listed are NOT individual Parts but complete assemblies and/or box of assemblies. Check before ordering.

30 foot Maverick Mounted on 4 WD Tractors Only

02982395 Maverick Mount Kit - JD-6615 & 6715 Cab / 4 wd: Consist of the Following Items

Item	Part No.	Qty	Description
	02982395	**--**	**MAVERICK 30 FT. BOOM MOUNT KIT (ITEMS 1 THROUGH 9)**
1.	02971789	1	WHEEL WEIGHT KIT, 1400 LBS.
2.	02976671	1	AUXILLARY WHEEL WEIGHT KIT 408LBS.
3.	02982396	1	COMPONENT BOX, JD-6615/6715 MAVERICK
4.	02982392	1	BOOM REST WELDMENT
5.	02982380	1	RIGHT FRONT RAIL WELDMENT
6.	02982383	1	LEFT FRONT RAIL WELDMENT
7.	02982388	1	RH REAR RAIL WELDMENT
8.	02982390	1	LH REAR RAIL WELDMENT
9.	02982412	1	KIT, JD6015/6020 LEXAN DOOR

02982396 Component Box: Consist of the following Item No.

Item	Part No.	Qty	Description
	02982396	**--**	**COMPONENT BOX ASSEMBLY (ITEMS 1 THROUGH 12)**
1.	02982157	1	HOSE BUNDLE
2.	02982292	1	HOSE , #12 -12FJX - 12FJX - 24” LG
3.	02982397	1	BOLT BAG, JD6615/6715 MAVERICK
4.	02979790	1	CRANKSHAFT PULLEY ADAPTER
5.	02976087	1	PUMP MOUNT PLATE, MACHINED
6.	02978480	2	SPACER, PUMP PLATE
7.	02974704	1	REAR AXLE STABILIZER STRAP WELDMENT
8.	02982431	1	FRONT AXLE STABILIZER KIT
9.	02975257A	1	DRIVELINE ASSEMBLY, 1-15 SPLINE
10	02981382	2	TANK MOUNT PLATE, JD6615/7020 (LH OR RH SAME)
11.	02982434	1	INST MANUAL, DEERE MAVERICK
12	02981465	1	PUMP COVER MOUNT ASSEMBLY

Component Box P/N 02982396 is in Mount Kit P/N 02982395

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Mounting Component ID 30 ft. Cab 4 wd

02982157 Hose Bundle: Consist of the following Item No.

Item	Part No.	Qty	Description
	02982157	--	HOSE BUNDLE ASSEMBLY (ITEMS 1 THROUGH 6)
1.	**02982158**	**1**	**ASY POWER HOSES IN SLEEVE (Includes next 5 Items)**
	02982142	1	HOSE, #16 - 16FJX - 16FJX90° - 146" LG (RED TIE)
	02982143	1	HOSE, #16 - 16FJX - 16FJX90° - 146" LG (ORANGE TIE)
	02982144	1	HOSE, #12 - 12FJX - 12FJX90° - 144" LG (BLUE TIE)
	000859	2	PLASTIC TIE
	00999588	1	CORDURA SLEEVING, BLACK 3.66" ID X12.5 FT. LG
2.	**02982159**	**1**	**ASY SWING HOSES IN SLEEVE (Includes next 4 Items)**
	02982145	1	HOSE, #6 - 6FJX - 6FJX90° - 140" LG (GREEN TIE)
	02982146	1	HOSE, #6 - 6FJX - 6FJX90° - 140" LG (GREEN / WHITE TIE)
	000859	2	PLASTIC TIE
	00900913	1	CORDURA SLEEVING, BLACK 2.54" ID X 10 FT. LG
3.	**02982160**	**1**	**ASY LIFT HOSES IN SLEEVE (Includes next 4 Items)**
	02982147	1	HOSE, #6 - 6FJX - 6FJX - 179" LG (ORANGE TIE)
	02982148	1	HOSE, #6 - 6FJX - 6FJX - 179" LG (ORANGE / WHITE TIE)
	000859	2	PLASTIC TIE
	00900913	1	CORDURA SLEEVING, BLACK 2.54" ID X 14.5 FT. LG
4.	**02982161**	**1**	**ASY DIP-TELE-TILT HOSES IN SLEEVE (Includes next 8 Items)**
	02982149	1	HOSE #6-6FJX-6FJX-147LG (BLUE TIE)
	02982150	1	HOSE #6-6FJX-6FJX-147LG (BLUE / WHITE TIE)
	02982151	1	HOSE #6-6FJX-6FJX-152LG (YELLOW TIE)
	02982152	1	HOSE #6-6FJX-6FJX-152LG (YELLOW / WHITE TIE)
	02982153	1	HOSE #6-6FJX-6FJX-152LG (RED TIE)
	02982154	1	HOSE #6-6FJX-6FJX-152LG (RED / WHITE TIE)
	000859	2	PLASTIC TIE
	00999588	1	CORDURA SLEEVING 3.66 ID X 12 FT. LG
5.	**02982162**	**1**	**ASY DIVERTER HOSES IN SLEEVE (Includes next 4 Items)**
	02982155	1	HOSE, #4 - 4FJX - 4FJX90 - 82" LG (GREEN TIE)
	02982156	1	HOSE, #4 - 4FJX - 4FJX90 - 82" LG (GREEN / WHITE TIE)
	000859	2	PLASTIC TIE
	00900913	1	CORDURA SLEEVING, BLACK 2.54" ID X 6.5 FT. LG
6.	**02982136**	**1**	**ASY SWIVEL-DOOR HOSES IN SLEEVE (Includes next 6 Items)**
	02982128	1	HOSE, #4 - 4FJX - 4FJX90° - 94" LG (YELLOW TIE)
	02982129	1	HOSE, #4 - 4FJX - 4FJX90° - 94" LG (YELLOW / WHITE TIE)
	02982294	1	HOSE, #4 - 4FJX - 4FJX90° - 94" LG (GREEN TIE)
	02982295	1	HOSE, #4 - 4FJX - 4FJX90° - 94" LG (GREEN / WHITE TIE)
	000859	2	PLASTIC TIE
	00900913	1	CORDURA SLEEVING, BLACK 2.54" ID X 5.5 FT. LG

Hose Bundle P/N 02982157 is in Component Box P/N 02982396 which is in Mount Kit P/N 02982395

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Mounting Component ID 30 ft. Cab 4 wd

02982397 Bolt Bag: Consist of the following Item No.

Item	Part No.	Qty	Description
	02982397	--	**BOLT BAG ASSEMBLY** (ITEMS 1 THROUGH 25)
1.	02976344	4	BOLT, HEX HEAD 7/16”-NC X 1-1/4” PL GR8
2.	00022200	4	LOCKWASHER, 7/16” PL
3.	02971158	20	LOCKWASHER, 20MM
4.	00059500	4	NUT, HEX 1”-NC PL
5.	02032200	4	LOCKWASHER STD,1”
6.	02959587	2	BOLT, HEX HEAD, 3/4”-10NC X 6" PL GR8
7.	00037200	34	LOCKNUT, 3/4”-NC
8.	5312316	84	WASHER, 3/4" (20 MM) HARDENED
9	02963646	6	BOLT, HEX HEAD 3/4”-NC X 2-1/2” PL GR8
10.	00748547	8	FLATWASHER, 1-1/32” X 2-3/16” X .22” HARDENED
11.	02972088	8	BOLT, HEX HEAD 3/4”-NC X 3-1/2” PL GR8
12.	02918600	8	BOLT, HEX HEAD 3/4”-10UNC X 2” PL GR8
13.	00759457	4	BOLT, LAG 5/16” X 2” PL GR5
14.	00011700	4	LOCKWASHER, 5/16 PL STD
15.	00755954	5	LOCKWASHER, M10 SPRING
16.	02976113	16	BOLT, HEX HEAD M20-P2.5 X 80MM PL GR10.9
17.	02980722	4	BOLT, HEX HEAD 1”-8NC X 11-1/2” PL GR8
18.	03200269	4	BOLT, HEX HEAD 3/4”-NC X 3” PL GR8
19.	02959390	6	BOLT, HEX HEAD 3/4”-NC X 2-1/4” PL GR8
20.	00752824	2	BOLT, HEX HEAD M16-P2.0 X 30MM PL GR10.9
21	00756077	2	FLATWASHER, 5/8” HARDENED
22.	02975669	4	BOLT, HEX HEAD M20-P2.5 X 60MM PL GR10.9
23.	02979791	4	BOLT, HEX HEAD M10-P1.5 X 35MM PL GR10.9
24.	00751688	1	BOLT, HEX HEAD M10-P1.5 X 25MM PL GR8.8
25	00010300	2	LOCKWASHER, 5/8”

Bolt Bag P/N 02982397 is in Component Box P/N 02982396 which is in Mount Kit P/N 02982395

02971789 Wheel Weight Kit: Consist of the following Item No.

Item	Part No.	Qty	Description
	02971789	--	**WHEEL WEIGHT KIT** (ITEMS 1 THROUGH 6)
1	02970758	1	WHEEL WEIGHT, 1400 LBS
2	02971569	3	WASHER, WHEEL WEIGHT
3	02971791	1	DRAWING, WHEEL WEIGHT INSTALLATION
4	02979603	3	BOLT, HEX HEAD 7/8”-NC X 16” PL GR 8 (4” OF THREAD)
5	00012200	3	LOCKWASHER, 7/8” PL STD
6	00012300	3	NUT, HEX 7/8”-NC

Wheel Weight Kit P/N 02971789 is in Mount Kit P/N 02982395

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Mounting Component ID 24 ft. Cab & 2wd

02976671 Auxillary Wheel Weight Kit: Consist of the following Item No.

Item	Part No.	Qty	Description
	02976671	**--**	**AUXILLIARY WHEEL WEIGHT KIT (ITEMS 1 THROUGH 4)**
1	00012200	2	LOCKWASHER, 7/8” PL STD
2	00012300	2	NUT, HEX 7/8”-NC
3	00760266	2	BOLT, HEAX HEAD 7/8”-NC X 5-1/2” GR8
4	02976644	3	PLATE, WHEEL WELDMENT

Auxilary Wheel Weight Kit P/N 02976671 is in Mount Kit P/N 02982395

02982431 Front Axle Staibilizer Kit: Consist of the following Item No.

Item	Part No.	Qty	Description
	02982431	**--**	**FRONT AXLE STABILIZER KIT (ITEMS 1 THROUGH 17)**
1.	02981316	1	CYLINDER ASSEMBLY
2.	02981896	1	ADAPTER, HYD REDUCER 6FJX - 4MJ
3.	02965166	1	ADAPTER, HYD TEE 6MJ - 6MJ - 6FJX
4.	02960018	1	ADAPTER, HYD ELBOW 4MB - 4MJ90°
5.	02960054	1	PLUG #4MB W/T-VENT & O-RING
6.	001845	1	HOSE, #4 - 4FJX - 4FJX90° - 70” LG
7.	7B101128	2	BOLT, HEX HEAD 5/8”-NC X 3-1/2” PL GR8
8.	00695100	2	LOCKNUT, TOPLOCK 5/8”-NC
9.	00001800	2	LOCKNUT, TOPLOCK 1/2”-NC PLB
10.	02971158	2	LOCKWASHER, 20MM
11.	02975738	2	BOLT, HEX HEAD M20-P2.5 X 70MM PL GR10.9
12.	5312316	2	WASHER, 3/4" HARDENED
13.	02972846	1	BOLT, HEX HEAD, M16-P2.0 X 40MM PL GR10.9
14.	00756077	1	WASHER, 5/8” HARDENED
15.	00010300	1	LOCKWASHER, 5/8”
16.	00759635	4	FLATWASHER, 1/2” HARDENED NON PLTD
17.	02892000	2	BOLT, HEX HEAD 1/2"-13NC X 1-1/2" PL GR8

Auxilary Wheel Weight Kit P/N 02976671 is in Mount Kit P/N 02982395

02982412 Lexan Door Kit: Consist of the following Item No.

Item	Part No.	Qty	Description
	02982412	**--**	**LEXAN DOOR KIT (ITEMS 1 THROUGH 3)**
1.	02982398	1	LEXAN DOOR, JD6020
2.	02982417	1	TRIM PUSH ON WEATHER SEAL 168"
3.	02982418	1	TRIM PUSH ON WEATHER SEAL 96"

Lexan Door Kit P/N 02982412 is in Mount Kit P/N 02982395

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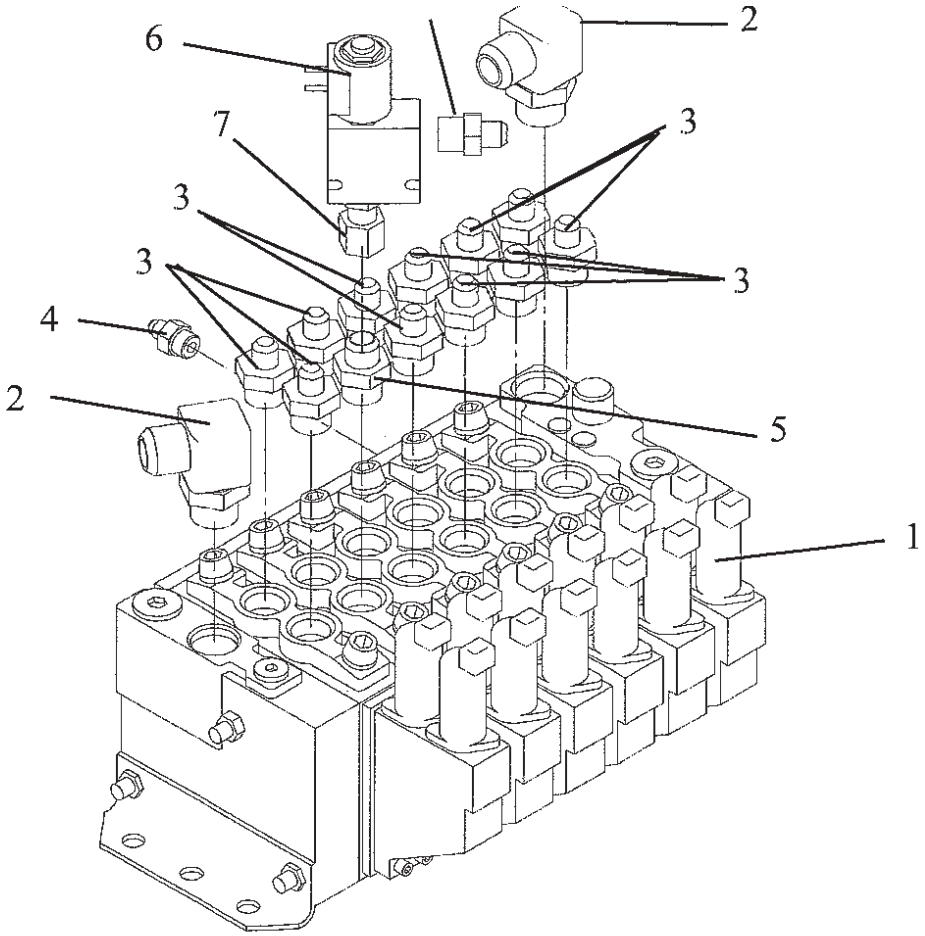
Mounting Component ID - Control Valve Fittings



Item	Part No.	Qty	Description
	02981888	**--**	**Valve & Fittings Asy, 6 Spool**
1	02981370	1	Valve Asy w/o Fittings
2	02090800	2	Adapter Hyd, Elbow 12MB - 12MJ 90°
3	02972177	11	Adapter Hyd, Straight 10MB - 6MJ
4	03200284	1	Adapter Hyd, Straight 6MB - 4MJ
5	02981889	1	Adapter Hyd, Straight 10MB - 6MJ
6	02972208	1	Valve Solenoid Asy
7	02975438	1	Adapter Hyd, Straight 8MB - 8FJX
8	02981890	1	Adapter Hyd, Straight 8MB - 6MJ

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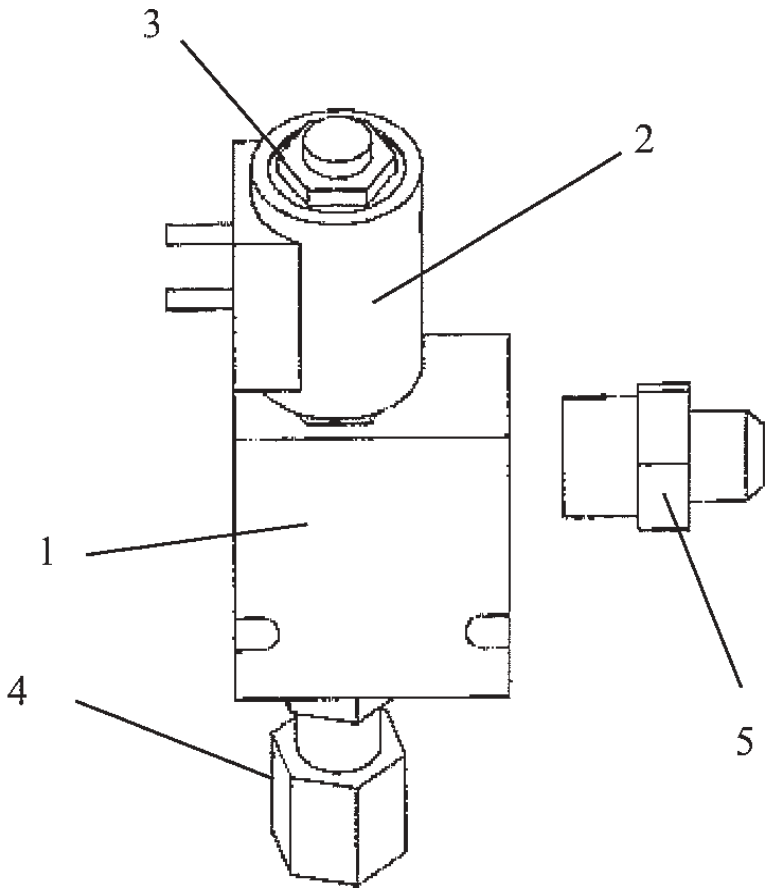
Mounting Component ID - Hydraulic Lock Valve



Item	Part No.	Qty.	Description
	02972208	--	Solenoid Valve Asy
1	02971425	1	Seal Kit, f/ solenoid Valve
2	02975198	1	Coil, 12V- DC w/Dual 8-32NF Studs
3	02975199	1	Cartridge, Solenoid Valve
4	02975438	1	Adapter Hyd, Straight 8MB-6FJX
5	02981890	1	Adapter Hyd, Straight 5MB - 6MJ

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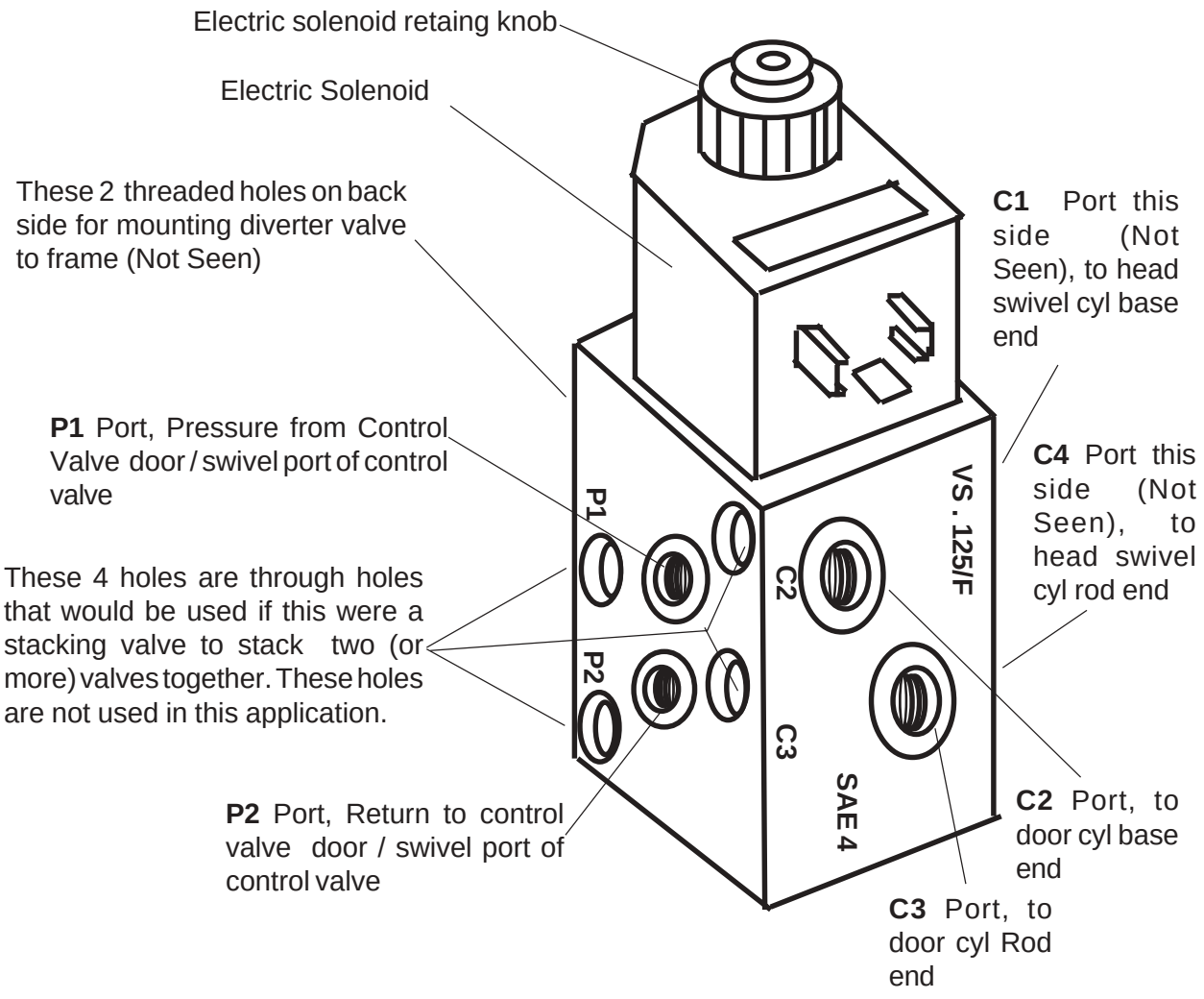
Mounting Component ID - DIVERTER VALVE

Door / Swing Cylinder Diverter Valve. Asy: P/N 02977622

The Diverter valve is a electrical operated valve that allows the hydraulic pressure to be shared to operate two (or more if valves are stacked) funtions with a single pressure supply. This valve is strictly a diverter valve and is designed to direct the pressure, not regulate the flow or pressure.

The Port openings on this diverter valve are marked with letter number codes which show wich port is connected to which hose and where that hose connect on other end (See Figure 18)

Port	Function & Connection
P1	Hose Hydraulic Pressure from Door / Swivel (B) Port on Control Valve
P2	Hose Hydraulic Return to Door / Swivel (A) Port on Control Valve
C1	Hose to Head Swivel Cylinder Base End
C2	Hose to Door Cylinder Base End
C3	Hose to Door Cylinder Rod End
C4	Hose to Head Swivel Cylinder Rod End


Electric solenoid retaing knob
Electric Solenoid
These 2 threaded holes on back side for mounting diverter valve to frame (Not Seen)
C1 Port this side (Not Seen), to head swivel cyl base end
P1 Port, Pressure from Control Valve door / swivel port of control valve
C4 Port this side (Not Seen), to head swivel cyl rod end
These 4 holes are through holes that would be used if this were a stacking valve to stack two (or more) valves together. These holes are not used in this application.
P1
P2
C2
C3
VS . 125/F
SAE 4
P2 Port, Return to control valve door / swivel port of control valve
C2 Port, to door cyl base end
C3 Port, to door cyl Rod end

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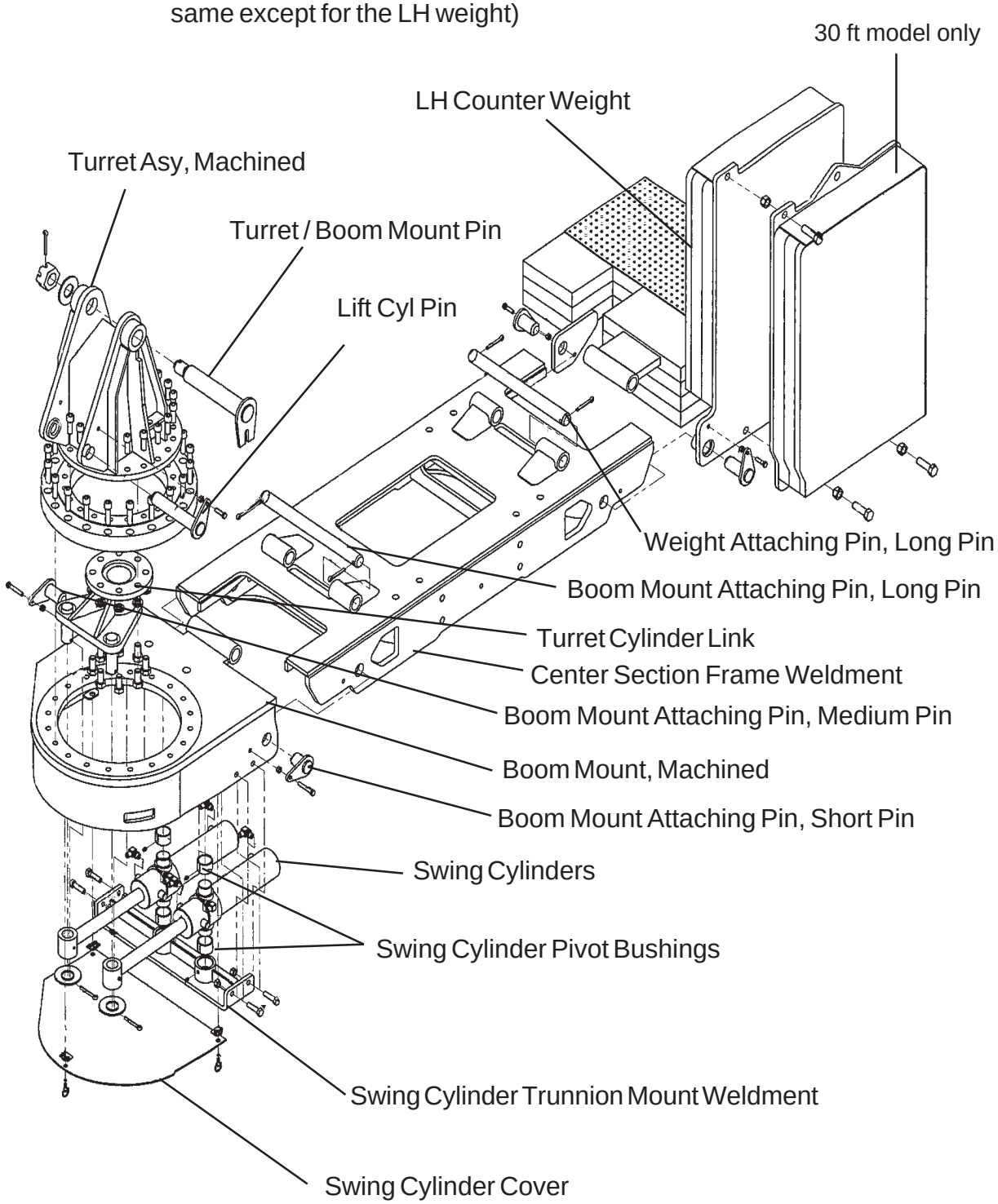
Mounting Component ID - Under Mnt Frame Asy 24'/30'


Under Mount Frame Asy (24 & 30 ft are the same except for the LH weight)
30 ft model only
LH Counter Weight
Turret Asy, Machined
Turret / Boom Mount Pin
Lift Cyl Pin
Weight Attaching Pin, Long Pin
Boom Mount Attaching Pin, Long Pin
Turret Cylinder Link
Center Section Frame Weldment
Boom Mount Attaching Pin, Medium Pin
Boom Mount, Machined
Boom Mount Attaching Pin, Short Pin
Swing Cylinders
Swing Cylinder Pivot Bushings
Swing Cylinder Trunnion Mount Weldment
Swing Cylinder Cover

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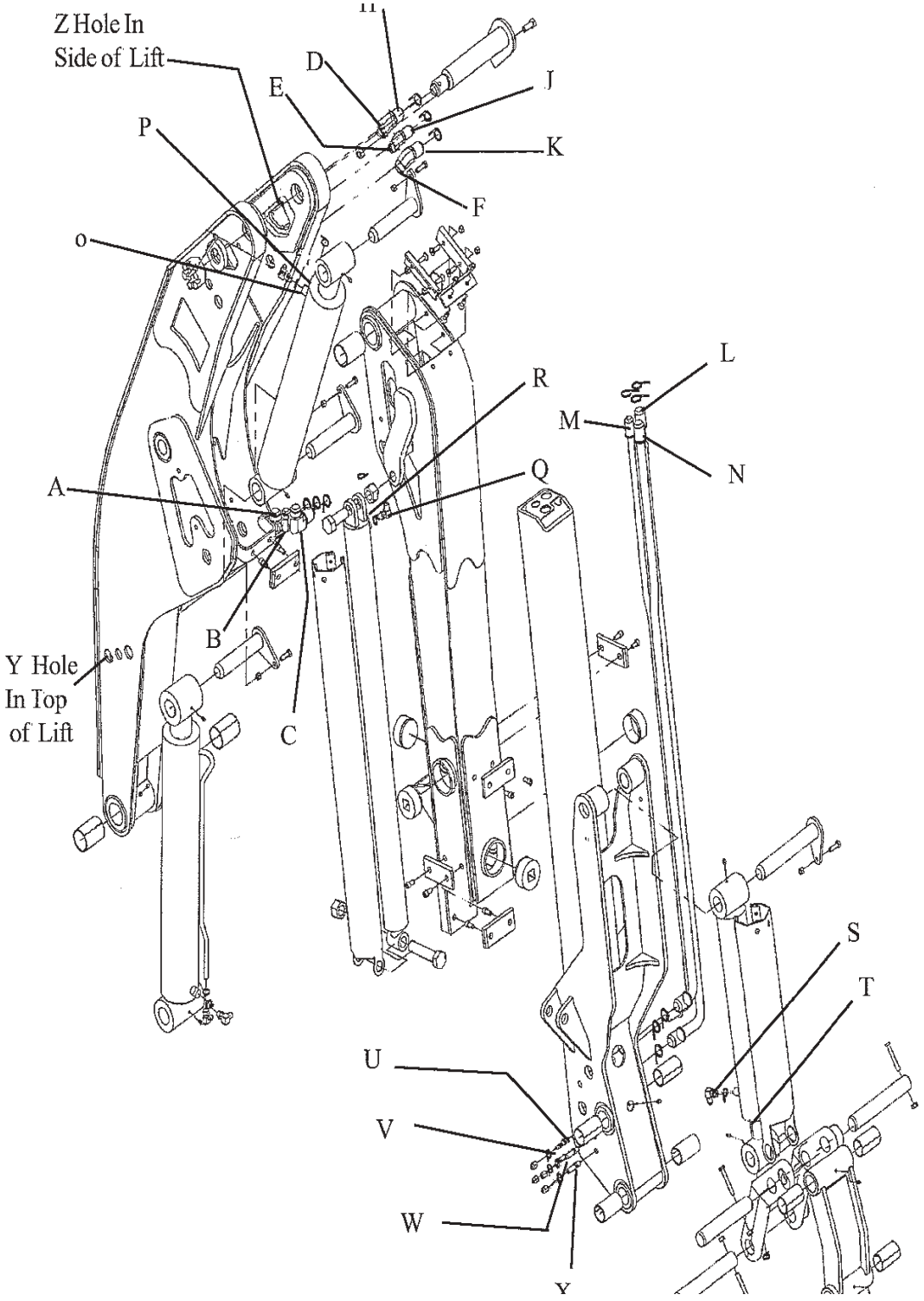
Mounting Component ID - Hyd Hose Connections

24 FT Boom



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Mounting Component ID - Hyd Hose Connections

24 FT Boom

Part No.	Qty.	End-1	End-2	Description
02981823	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 76" Lg. - Yel Tie - Door (Lift Sect'n)
02981824	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 76" Lg. - Yel/Wht Tie - Door (Lift Sect'n)
02981828	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 76" Lg. - Grn Tie - Swivel (Lift Sect'n)
02981829	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 76" Lg. - Grn/Wht Tie - Swivel (Lift Sect'n)
02981830	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 76" Lg. - Yel Tie - Ext'n (Lift Sect'n)
02981831	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 76" Lg. - Yel/Wht Tie - Ext'n (Lift Sect'n)
02981832	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 76" Lg. - Red Tie - Tilt (Lift Sect'n)
02981833	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 76" Lg. - Red/Wht Tie - Tilt (Lift Sect'n)
02981834	1	Y(MJ)	O(FJX)	Hose, #6 - 6MJ - 6FJX - 96" Lg. - Blu Tie - Dipper (Dipper Sect'n)
02981835	1	Y(MJ)	P(FJX)	Hose, #6 - 6MJ - 6FJX - 96" Lg. - Blu/Wht Tie - Dipper (Dipper Sect'n)
02981836	1	Z(MJ)	R(FJX)	Hose, #6 - 6MJ - 6FJX - 88" Lg. - Yel Tie - Ext'n (Dipper Sect'n)
02981837	1	Z(MJ)	Q(FJX)	Hose, #6 - 6MJ - 6FJX - 88" Lg. - Yel/Wht Tie - Ext'n (Dipper Sect'n)
02981838	1	Z(MJ)	V(FJX)	Hose, #4 - 4MJ - 4FJX - 176" Lg. - Yel Tie - Door (Dipper Sect'n)
02981839	1	Z(MJ)	U(FJX)	Hose, #4 - 4MJ - 4FJX - 176" Lg. - Yel/Wht Tie - Door (Dipper Sect'n)
02981840	1	Z(MJ)	X(FJX)	Hose, #4 - 4MJ - 4FJX - 176" Lg. - Grn Tie - Swivel (Dipper Sect'n)
02981841	1	Z(MJ)	W(FJX)	Hose, #4 - 4MJ - 4FJX - 176" Lg. - Grn/Wht Tie - Swivel (Dipper Sect'n)
02981842	1	Z(MJ)	T(FJX)	Hose, #6 - 6MJ - 6FJX - 176" Lg. - Red Tie - Tilt (Dipper Sect'n)
02981843	1	Z(MJ)	S(FJX)	Hose, #6 - 6MJ - 6FJX - 176" Lg. - Red/Wht Tie - Tilt (Dipper Sect'n)
02981846	1	C(FJX)	F(FJX)	Hose, #16-16FJX-16FJX90°-102" Lg.-Red Tie-Motor-P (Lift Sect'n)
02981847	1	A(FJX)	D(FJX)	Hose, #16-16FJX-16FJX90°-102" Lg.-Org Tie-Motor-R (Lift Sect'n)
02981848	1	K(FJX)	L(FJX)	Hose, #16-16FJX-16FJX-54" Lg.-Red Tie-Motor-P (Dipper Sect'n)
02981849	1	H(FJX)	N(FJX)	Hose, #16-16FJX-16FJX-58" Lg.-Org Tie-Motor-R (Dipper Sect'n)
02981850	1	B(FJX)	E(FJX)	Hose, #12-12FJX-12FJX90°-102"Lg.-Blu Tie-Case Drain (Lift Sect'n)
02981851	1	J(FJX)	M(FJX)	Hose, #12-12FJX-12FJX-56" Lg.-Blu Tie-Case Drain (Dipper Sect'n)

NOTE 1: Hose End-1 & End-2, these are where the ends of that hose connect, the letter shows location of that end and ( ) show type hose fitting at that end.

NOTE 2: The hoses have plastic ties on the to show which hose is which. The colors are abreviated to YEL = Yellow, YEL/W = Yellow with Whiter stripe, GRN = Green, GRN/W = Green with White Stripe, RED = Red, RED/W = Red with White Stripe, BLU - Blue, BLU/W = Blue with White Stripe, ORG = Orange, ORG/W = Orange with White Stripe.

NOTE 3: (Sect'n) = Location where hose is located on boom

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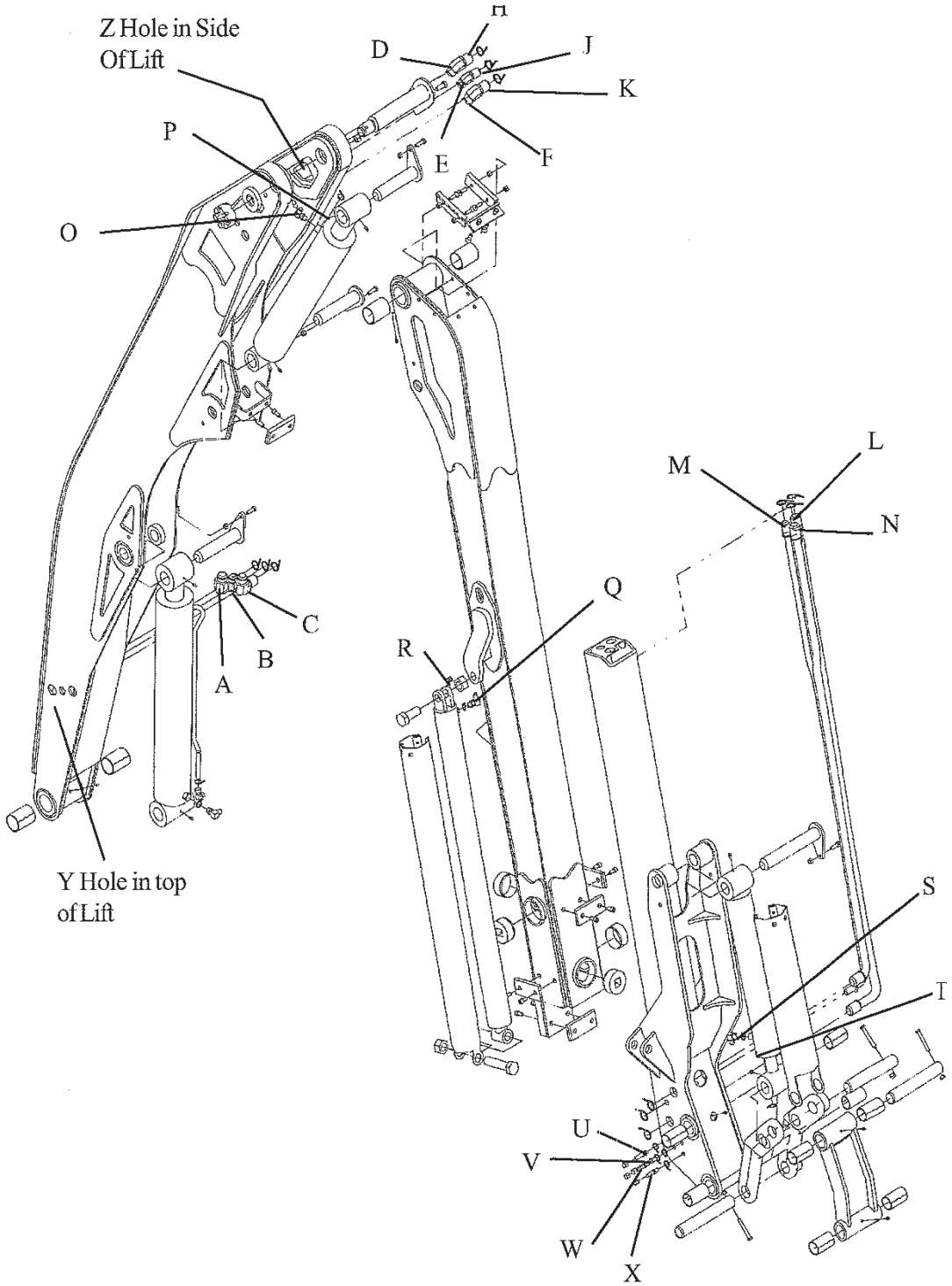
Mounting Component ID - Hyd Hose Connections

30 FT Boom



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Mounting Component ID - Hyd Hose Connections

30 FT Boom

Part No.	Qty.	End-1	End-2	Description
02981879	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 115" Lg. - Yel Tie - Door (Lift Sect'n)
02981880	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 115" Lg. - Yel/Wht Tie - Door (Lift Sect'n)
02981855	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 115" Lg. - Grn Tie - Swivel (Lift Sect'n)
02981856	1	Y(MJ)	Z(FJX)	Hose, #4 - 4MJ - 4FJX - 115" Lg. - Grn/Wht Tie - Swivel (Lift Sect'n)
02981857	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 115" Lg. - Yel Tie - Ext'n (Lift Sect'n)
02981858	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 115" Lg. - Yel/Wht Tie - Ext'n (Lift Sect'n)
02981859	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 115" Lg. - Red Tie - Tilt (Lift Sect'n)
02981860	1	Y(MJ)	Z(FJX)	Hose, #6 - 6MJ - 6FJX - 115" Lg. - Red/Wht Tie - Tilt (Lift Sect'n)
02981861	1	Y(MJ)	O(FJX)	Hose, #6 - 6MJ - 6FJX - 135" Lg. - Blu Tie - Dipper (Dipper Sect'n)
02981862	1	Y(MJ)	P(FJX)	Hose, #6 - 6MJ - 6FJX - 135" Lg. - Blu/Wht Tie - Dipper (Dipper Sect'n)
02981863	1	Z(MJ)	R(FJX)	Hose, #6 - 6MJ - 6FJX - 125" Lg. - Yel Tie - Ext'n (Dipper Sect'n)
02981864	1	Z(MJ)	Q(FJX)	Hose, #6 - 6MJ - 6FJX - 125" Lg. - Yel/Wht Tie - Ext'n (Dipper Sect'n)
02981865	1	Z(MJ)	V(FJX)	Hose, #4 - 4MJ - 4FJX - 214" Lg. - Yel Tie - Door (Dipper Sect'n)
02981866	1	Z(MJ)	U(FJX)	Hose, #4 - 4MJ - 4FJX - 214" Lg. - Yel/Wht Tie - Door (Dipper Sect'n)
02981867	1	Z(MJ)	X(FJX)	Hose, #4 - 4MJ - 4FJX - 214" Lg. - Grn Tie - Swivel (Dipper Sect'n)
02981868	1	Z(MJ)	W(FJX)	Hose, #4 - 4MJ - 4FJX - 214" Lg. - Grn/Wht Tie - Swivel (Dipper Sect'n)
02981869	1	Z(MJ)	T(FJX)	Hose, #6 - 6MJ - 6FJX - 214" Lg. - Red Tie - Tilt (Dipper Sect'n)
02981870	1	Z(MJ)	S(FJX)	Hose, #6 - 6MJ - 6FJX - 214" Lg. - Red/Wht Tie - Tilt (Dipper Sect'n)
02981873	1	C(FJX)	F(FJX)	Hose, #16-16FJX-16FJX90°-140" Lg.-Red Tie-Motor-P (Lift Sect'n)
02981874	1	A(FJX)	D(FJX)	Hose, #16-16FJX-16FJX90°-140" Lg.-Org Tie-Motor-R (Lift Sect'n)
02981875	1	K(FJX)	L(FJX)	Hose, #16-16FJX-16FJX-94" Lg.-Red Tie-Motor-P (Dipper Sect'n)
02981876	1	H(FJX)	N(FJX)	Hose, #16-16FJX-16FJX-98" Lg.-Org Tie-Motor-R (Dipper Sect'n)
02981877	1	B(FJX)	E(FJX)	Hose, #12-12FJX-12FJX90°-140"Lg.-Blu Tie-Case Drain (Lift Sect'n)
02981878	1	J(FJX)	M(FJX)	Hose, #12-12FJX-12FJX-96" Lg.-Blu Tie-Case Drain (Dipper Sect'n)

NOTE 1: Hose End-1 & End-2, these are where the ends of that hose connect, the letter shows location of that end and ( ) show type hose fitting at that end.

NOTE 2: The hoses have plastic ties on the to show which hose is which. The colors are abreviated to YEL = Yellow, YEL/W = Yellow with Whiter stripe, GRN = Green, GRN/W = Green with White Stripe, RED = Red, RED/W = Red with White Stripe, BLU - Blue, BLU/W = Blue with White Stripe, ORG = Orange, ORG/W = Orange with White Stripe.

NOTE 3: (Sect'n) = Location where hose is located on boom

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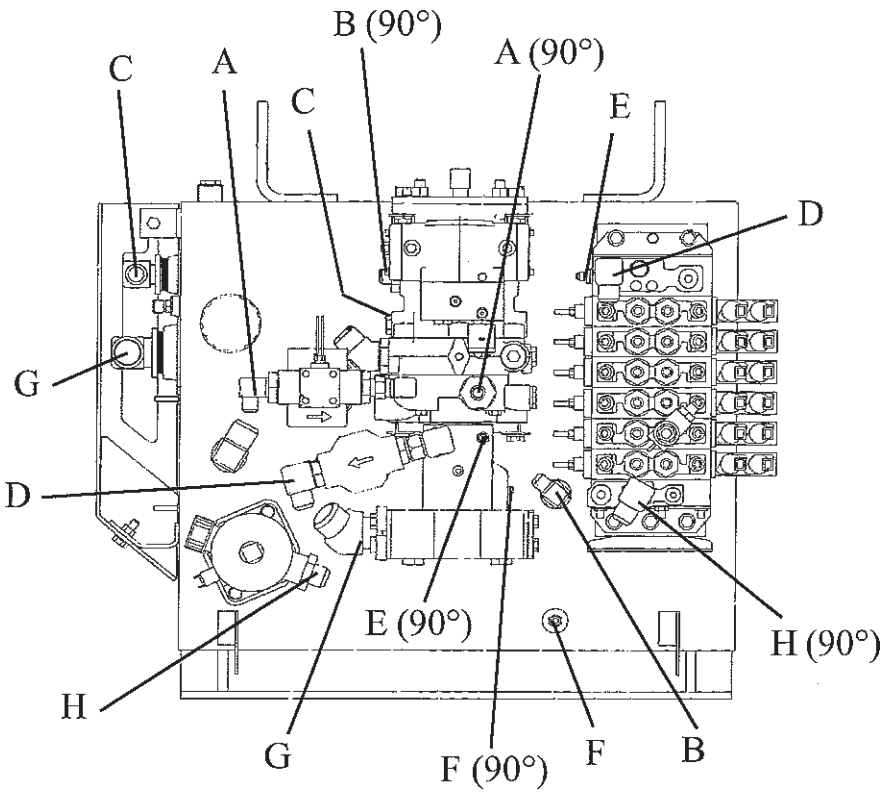
Mounting Component ID - Motor & Boom Pump Hose



Item	Part No.	Qty.	Description
A	02981427	1	Hose, 8FJX - 8FJX 90° - 24" Lg. w/Red Tie (Charge Filter to Pump)
B	02981428	1	Hose, 8FJX - 8FJX 90° - 21" Lg. w/ Blu Tie (Case Drain to Tank)
C	02981429	1	Hose, 12FJX - 12FJX - 23" Lg. (Pump to Suction Filter) hose under pump and cannot be seen in drawing.
D	02981430	1	Hose, 12FJX - 12FJX - 31" Lg. w/ Red Tie (Pressure Filter to Supply)
E	02981431	1	Hose, 4FJX - 4FJX 90° - 35" Lg. w/ Red Tie (Pump Load Sense to Valve (PX)
F	02981432	1	Hose, 4FJX - 4FJX 90° - 20" Lg. w/ Blu Tie (Pump Regulator to Tank)
F	----------	1	Hose, #4 Hose f/ Base end of Stabilizer Cyl to Tank port Via a Tee fitting.
G	02981433	1	Hose, 20FJX - 12FJX - 24" Lg. (Pump to Suction Filter)
H	02981462	1	Hose, 12FJX - 12FJX 90° - 20" Lg. w/ Org Tie (Valve Return to Tank)

NOTE: Hoses are not shown in drawing above, this is for clarity. The hose routing is for the hoses which connect from one point to the other. Use the instructions and hose description listed to follow hose routing.

Example: Hose - A connects to one end marked A and the other end of hose connects to the other item marked A. This is done with the other letters as well, the hose must connect to the same letter markings on each end as in drawing. Some hose will be marked with a colored plastic tie.

Some hose will have a straight fitting or a 90° fitting. This is to allow hoses to be routed to where they clear other items, when connecting hose put the end on that has the correct fitting as noted in drawing with (90°) or the straight fitting if note marked hose routing that is to make hoses clear other items. Do Not connect hose to different letter items, all hose end must connect to the same letter on both ends.

TO ID HOSES: Always check Size, Length, Fittings and Color Plastic Tie to identify the hoses. Some hoses will have the same color tie but the size, length or fittings will be different.

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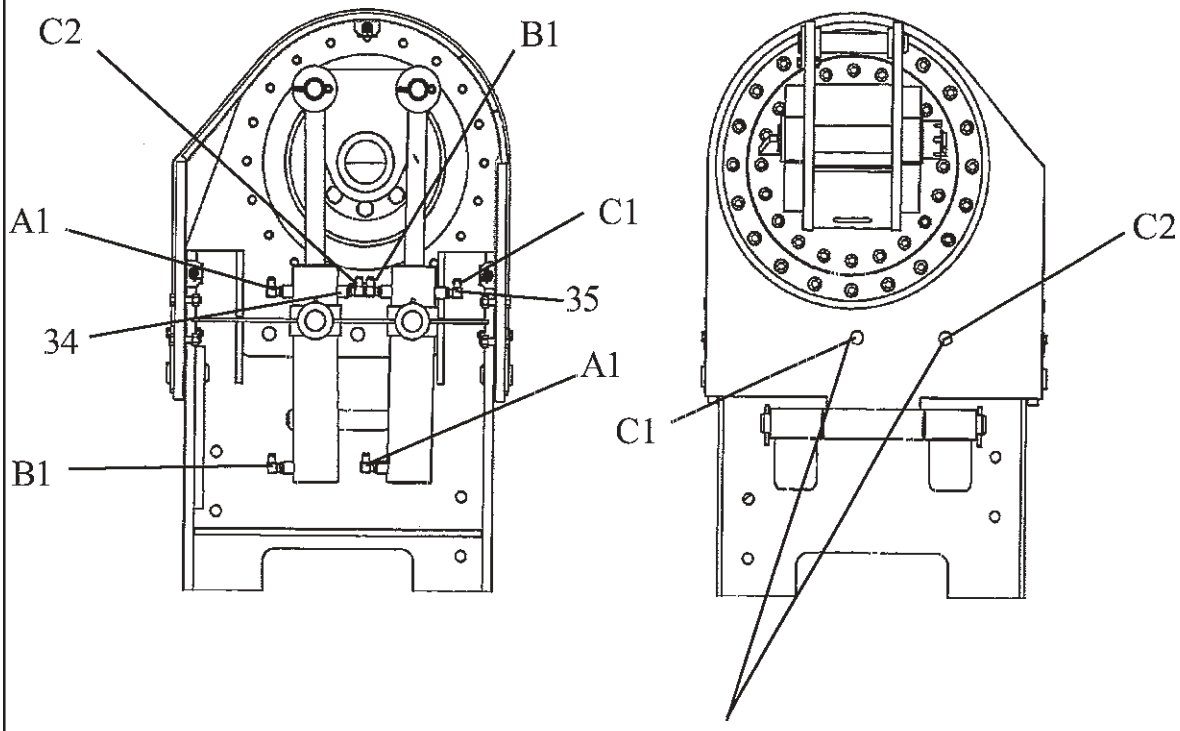
Mounting Component ID - Swing Cyl. Hose (24'/30')



NOTE: Male JIC Hose End To Extend Up Thru Holes

Item	Part No.	Qty	Description
A1	02981825	1	Hose, #6-6FJX-6FJX-28"Lg
B1	02981825	1	Hose, #6-6FJX-6FJX-28"Lg
C1	02981826	1	Hose, #6-6FJX-6MJ-16"Lg- Geen Tie
C2	02981827	1	Hose, #6-6FJX-6MJ-16"Lg- Green / White Tie
34	02968832	1	Plastic Tie, Green
35	02968833	1	Plastic Tie, Green / White

NOTE:

Hose are not shown in drawing, this is for clarity. The hose routing is for hoses which connect from one point to the other. Use the instructions and hose descriptions listed to follow hose routing.

Example: Hose - A1 connects to one end marked A1 and the other end connects to the other connection marked A1. This is done with the other letters as well, the hose must connect to the same letter mark on each end. Some hose have a plastic colored tie on it to ID hose and location.To ID hoses always check hose size, length and colored plastic tie.

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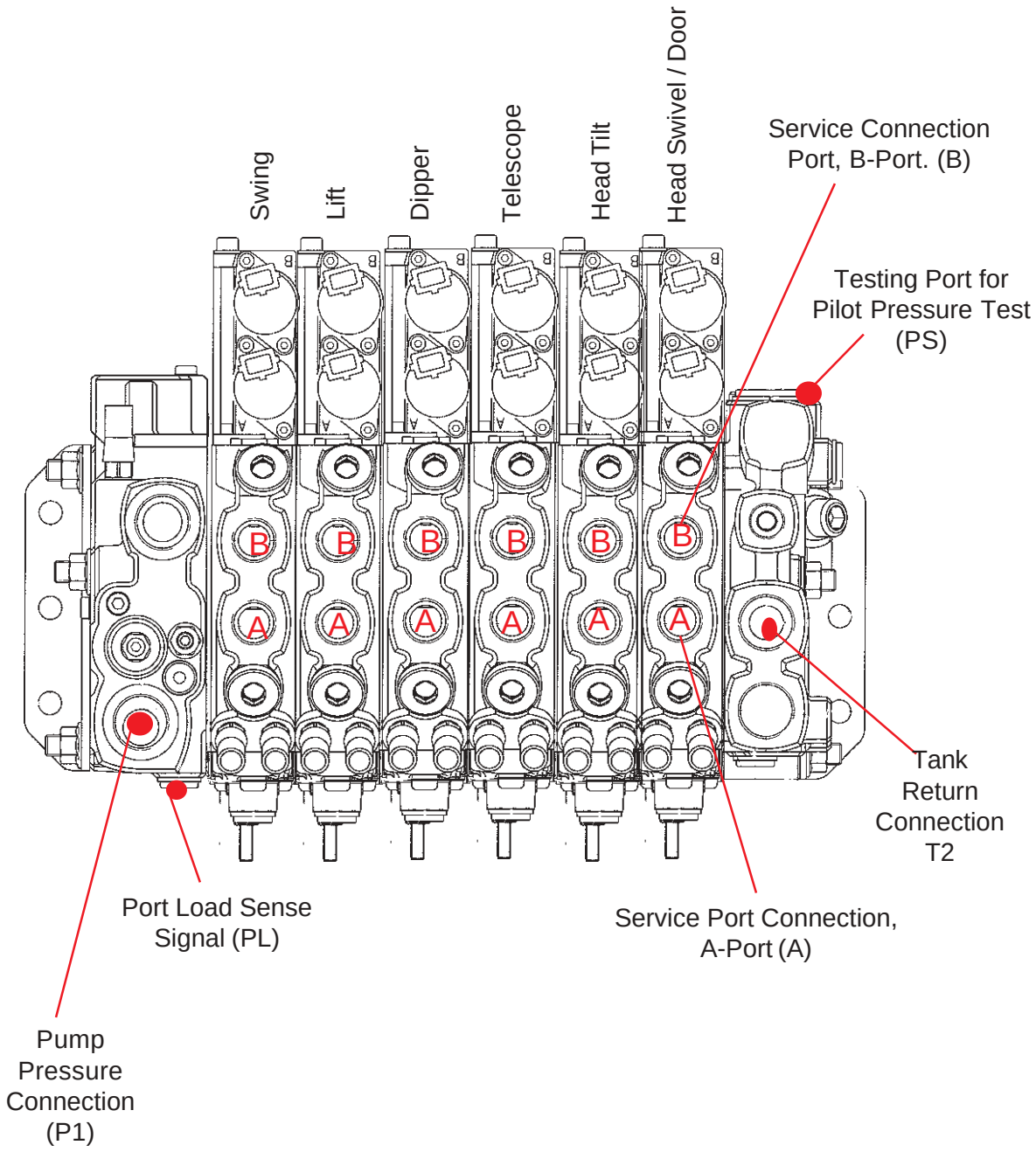
Mounting Component ID - Cyl Cntrl Valve Connections



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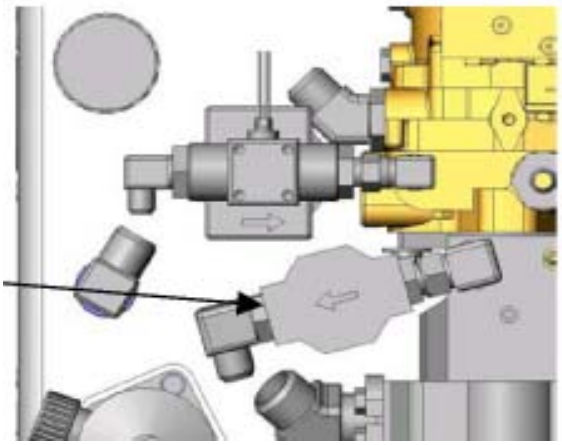
Mounting Component ID - Cyl Cntrl Valve Connections

HYDRAULIC HOSE CODES

Hydraulic Hose Band Mark Color Codes: Hose's and/or fittings are marked with a Color Coded Plastic Band around it. Some Bands are a solid Color and some have a Colored with a Stripe. The purpose of the colored bands are to provide a quick reference for hose and port connection. A metal band is also attachted to the hose, on that band is an Alamo Industrial Part Number for reference if needing a replacement hose. **Always Check Hose Size, Color Code & Part Number**

Boom Cylinder Circuit Hoses connections from Control Valve:

Color Tie	(Code)	Hose Size	Port	Hyd. Function
Green	G	SAE # 6	A	Swing, Back (Rod End)
Green / White	G/W	SAE # 6	B	Swing, Forward (Base End)
Orange	OR	SAE # 6	B	Lift, Down (Rod End)
Orange / White	OR/W	SAE # 6	A	Lift, Up (Base End)
Blue	B	SAE # 6	A	Dipper, In (Rod End)
Blue / White	B/W	SAE # 6	B	Dipper, Out (Base End)
Yellow	Y	SAE # 6	B	Telescope, In (Rod End)
Yellow / White	Y/W	SAE # 6	A	Telescope, Out (Base End)
Red	R	SAE # 6	A	Head Tilt, Up (RodEnd)
Red / White	R/W	SAE # 6	B	Head Tilt, Down (Base End)
Green	G	SAE # 4	A	Swivel, CW (Rod End)
Green / White	G/W	SAE # 4	B	Swivel, CCW (Base End)
Yellow	Y	SAE # 4	A	Door, Open (Rod End)
Yellow / White	Y/W	SAE # 4	B	Door, Closed (Base End)



Valve Pressure Filter Switch

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Component Identification

Iqan Display Unit

XP2 (Expansion, Power)

Analog Inputs	4	Prop. Output	4x2
Digital Inputs	(4)	Digital Outputs	4
Freq. Inputs	(2)	E-Gas	-

XP2 (Expansion, Power)

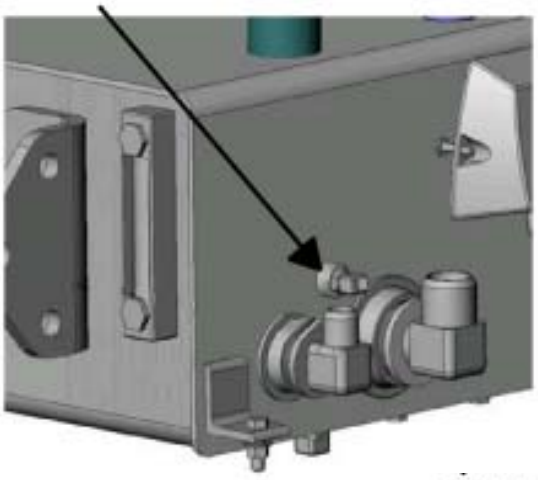
XT2(Expansion, Transmission)

Analog Inputs	10	Prop. Outputs	2x2
J1909 CAN hub	1	Digital Outputs	6
Freq. Inputs	(3)	E-Gas	1

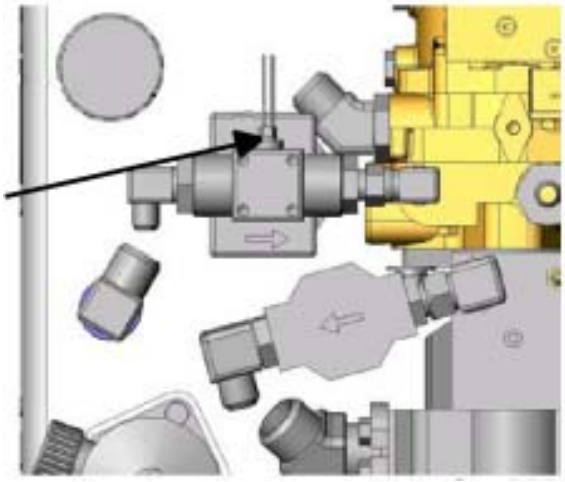
XT2 (Expansion, Transmission)

XS (expansion, signal)

XS (Expansion, Signal)



Tank Temperature Sensor



Charge Pressure Filter Switch

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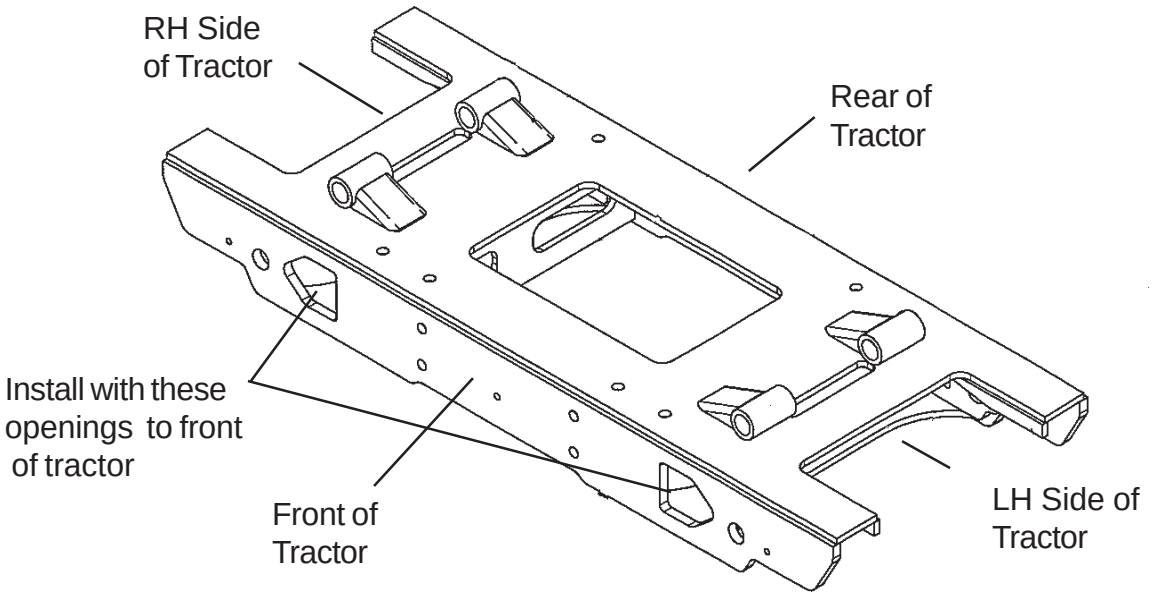
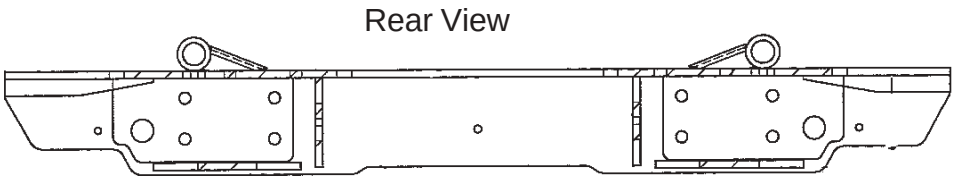
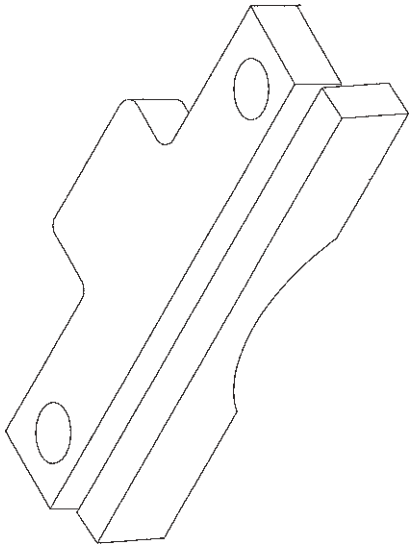
Component Identification

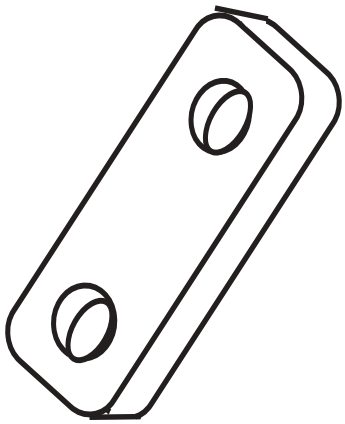




P/N 02981168 Center Section Under Mount Frame Wldmnt



P/N 02974704 LH Rear Axle Strap



P/N 02978480 Pump Mount Plate Spacer
(two required)

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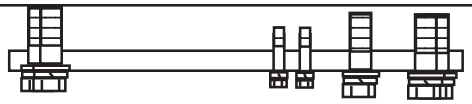
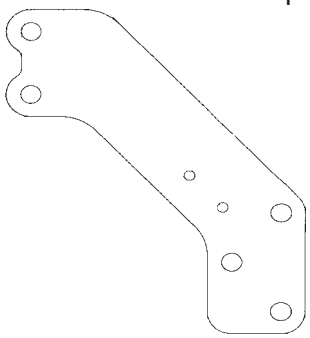
Component Identification

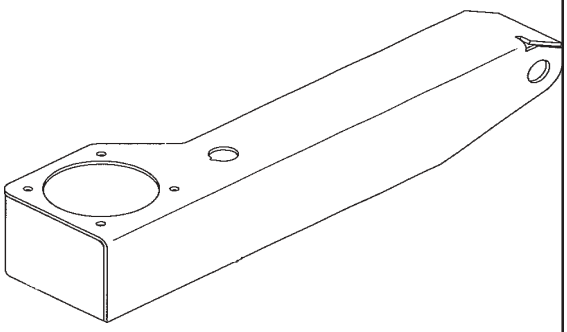


Tractor End

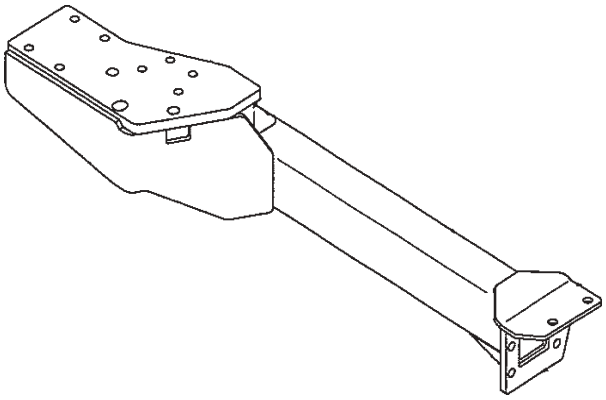
RH & LH Side are the same part



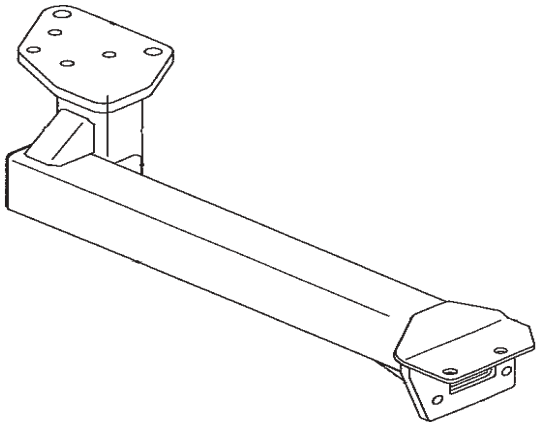
P/N 02981382 Tank Mount Plate
RH & LH use same part



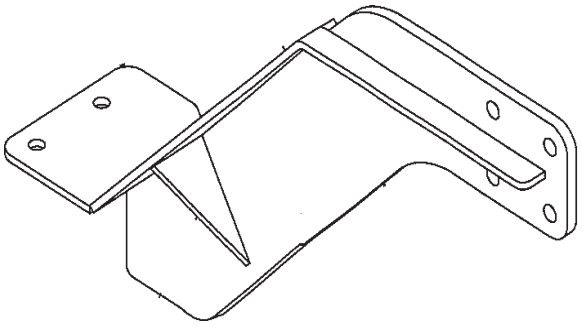
Arm Rest Controller Mount Weldment



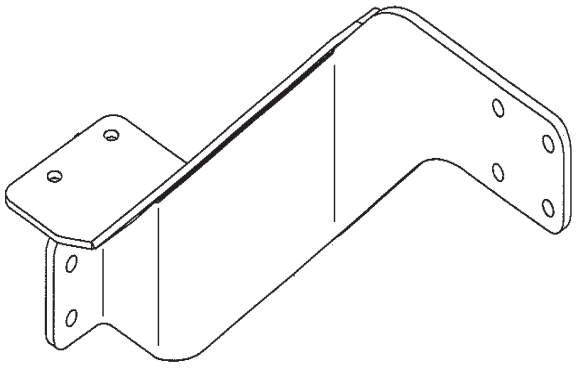
P/N 02982388 Rail Weldment
RH Rear



P/N 02982390 Rail Weldment
LH Rear



P/N 02982380 Rail
Weldment RH Front



P/N 02982383 Rail
Weldment LH Front

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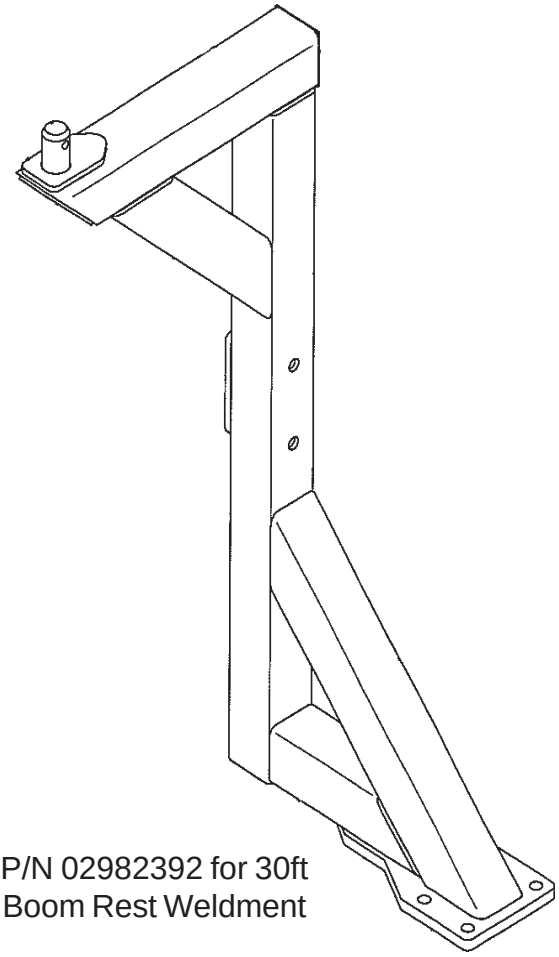
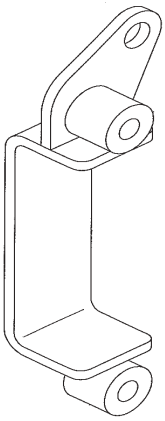
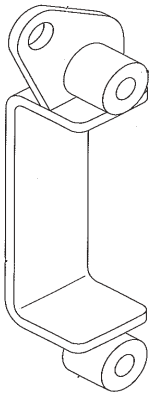
Component Identification



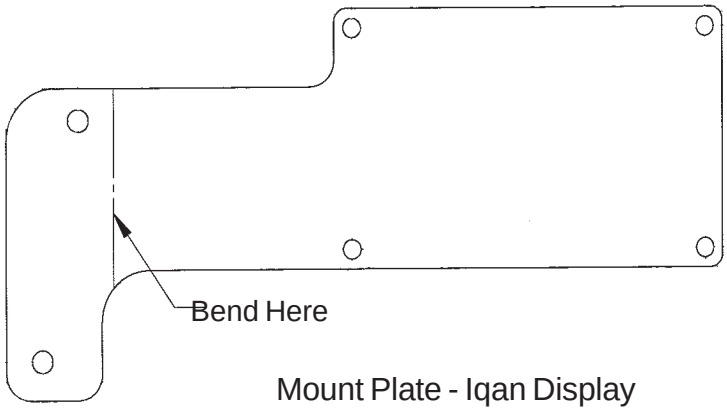
P/N 02982392 for 30ft Boom Rest Weldment



Front Axle Stabilizer Rear Bracket Weldment (Included in Front (Axle Stabilizer Kit Only)



Front Axle Stabilizer Front Bracket Weldment (Included in Front (Axle Stabilizer Kit Only)



Mount Plate - Iqan Display Mount

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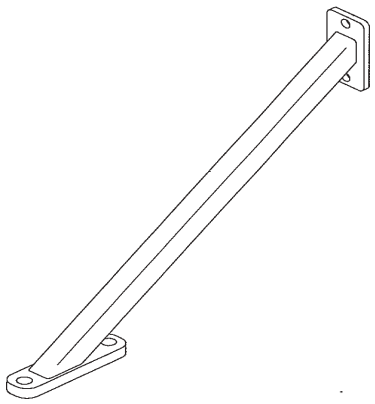
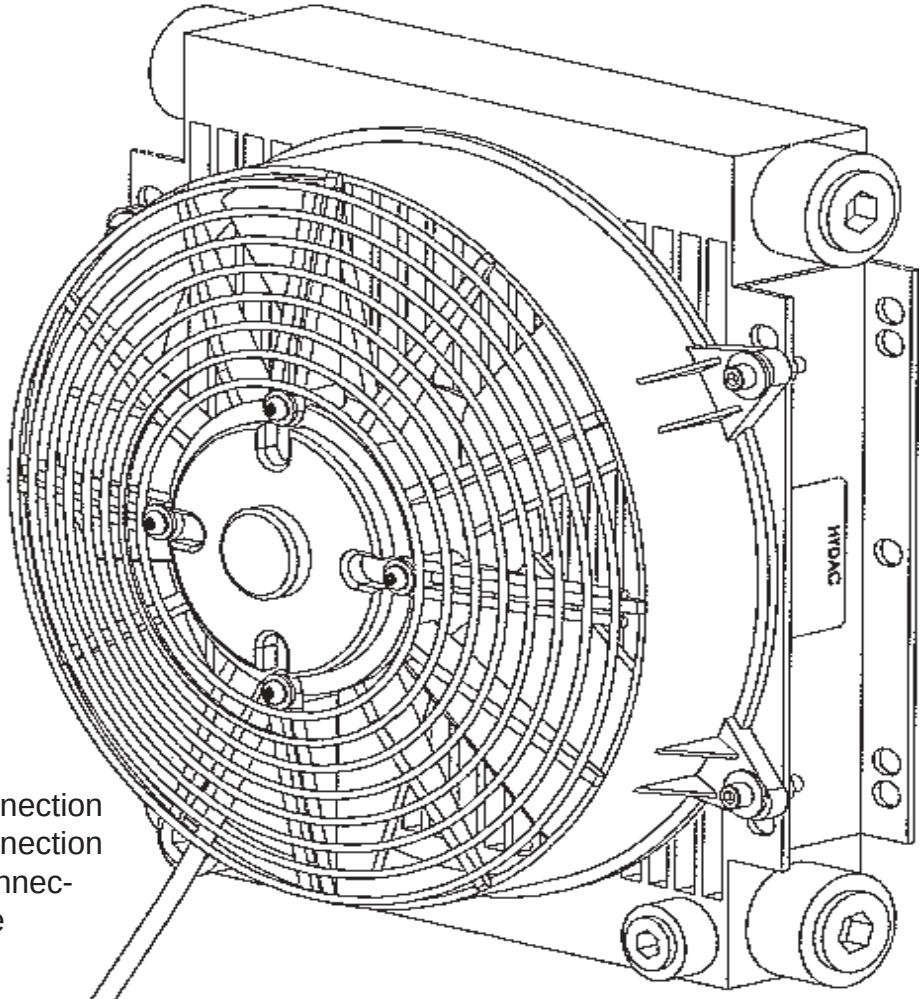
Component Identification



Boom Rest
Stabilizer Wldmnt



Two Wires in plug
1 - Blue Wire + Connection
1- Black Wire - Connection
Connecte to R1 Connec-
tion of Exterior Wire
Harness

Oil Cooler / Fan Assembly
P/N 02591841

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Section 12

MAVERICK

PRE-DELIVERY INSPECTION CHECKLIST

John Deere Tractor JD-6615, 6715

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MAVERICK PRE-DELIVERY INSPECTION CHECKLIST

Pre-Operation Inspection: Check the following items before operating the unit to assure that they are properly assembled. (See Bolt torque chart for bolt torque specifications)

Saftey Equipment:

----- Operators Manual is with Unit.
----- The Safety Decals are installed as listed in the Assembly Manual.
----- Valve operation plate is installed.
----- Operators cage or Tractor Cab is in place.
----- Deflectors are installed on the Mower Head.
----- Tractor Rops or Cab with seatbels installed properly.

Frame and Boom: (JD-6615 & 6715)

----- Axle Plate Bolts are torqued to 355 ft. lbs.
----- Boom Rest Axle Plate Bolts are torqued to 355 ft. lbs.
----- Front Rail Bolts are torqued to 425 ft. lbs.
----- Front Support Bolts at tractor are torqued to 425 ft. lbs.
----- Rear rail Bolts torque to 425 ft lbs.
----- Rotator bolts torque to 120 ft. lbs.
----- All Welds inspected toinsure proper welds and locations.

Hydraulic System:

----- Oil Level in Hydraulic Tank is within the sight gauge.
----- Hose connections are tight.
----- Hoses do not have any kinks or twist in them.
----- Front Pump Shaft adapter bolts are tight.
----- Front Pump Shaft Coupler / Drive Shaft is lubricated and has an anti-seize compound on the Splines of Pump and Shafts.
----- The Pump Drive Shaft has correct alignment.
----- Suction Hose has no leaks or kinks.

Rotary Mower Head:

----- Skid Shoe Bolts are torqued to 120 ft. lbs.
----- Spindle Housing Bolts are torqued to 400 ft. lbs.
----- The Spindle Housing is properly lubricated.
----- Motor Bolts are torqued to 120 ft. lbs.
----- Blade Carrier (Bar) Bolts torque to 400 ft. lbs.
----- Blade Bolts are torqued and the retainings Pins are in place.
----- Blades Swing freely.

Boom:

----- Boom Telesoping Bearings Adjusted completely inward.
----- All Hoses tightened and no leaks.
----- All hoses secured to where they will not rub, get pinched or hanging down where they may catch on something.
----- All Decals installed
----- Pump Primed and Pressure adjusted if needed (only applys to Pump for Cylinder control.

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MAVERICK PRE-DELIVERY INSPECTION CHECKLIST

Pre-Operation Inspection: Check the following items before operating the unit to assure that they are properly assembled. (See following page 1-4 for component location)

Flail Mower Head:

___ Skid Shoe Bolts are torqued to 120 ft-lbs
___ Motor Bolts are torqued to 120 ft-lbs
___ Belt Alignment& tension adjustment is correct
___ Cutter shaft bearings are properly lubricated
___ Roller bearings are properly lubricated
___ Blades swing freely

Tractor Mower Operation Inspection:

Using all Safety precautions, operate the Tractor and Mower unit for 30 minutes and while the unit is running check the following items: **Note!** Only make adjustments after the mower has been turned off and all motion has stopped and all hydraulic pressure has been relieved.

___ Check for Hydraulic oil leaks at the hose connections
___ Operate the boom and mower head throughout its full range of motion and check for hose's rubbing, pinching, or kinking.
___ Make sure the Return Filter Gauge is reading in the Green after Oil is warm.
___ Check the function of the Mower Head On-Off Valve and switch for proper function
___ Make sure that the tractor will not start with the mower on-off switch in the on position.
___ Check the Blade Rotation for the Rotary Mower Head to make sure it is turning Clockwise looking from the top of the mower deck.
___ Make sure the control valve boom movements agree with the valve operation decal.
___ Make Sure Boom Movement operates as expected and is smooth and under control (no air in the control system)
___ Look for any unusual or excessive noise or vibrations.
___ Make sure the left rear wheel of the tractor stays on the ground when the boom is fully extended horizontally with 200 lbs. placed on the outside of the mower head.

Post-Operation Inspection:

___ Check that the oil in the hydraulic tank has not turned milky in color or has foam on top.
___ Check that there are no loose fasteners or hardware.

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NOTES

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